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ESTABLISHED 1891. PUBLISHED EVERY SATURDAY

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Fig. 2. HAULING.

LANG'S LAY ROPES.

Fig. 26. WINDING.

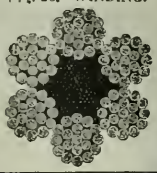
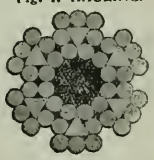


Fig. 1. HAULING.



PATENT FLATTENED STRAND ROPES.

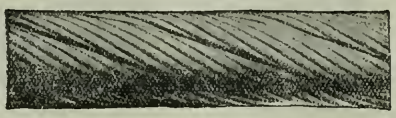


Fig. 4. WINDING.

Fig. 13. SINKING.

Advantages of Patent Flattened Strand Ropes.

1. Greater wearing surface, therefore longer life of rope and less wear upon pulleys.
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Fig. 13 for Sinking & Fig. 11b for Cranes, &c., are non-twisting.

Fig. 11b. CRANE &c.

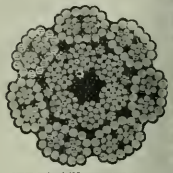

Fig. 15a. WINDING.

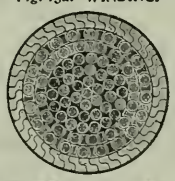

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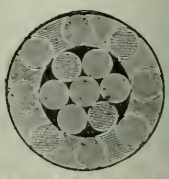
Fig. 20. GUIDE.



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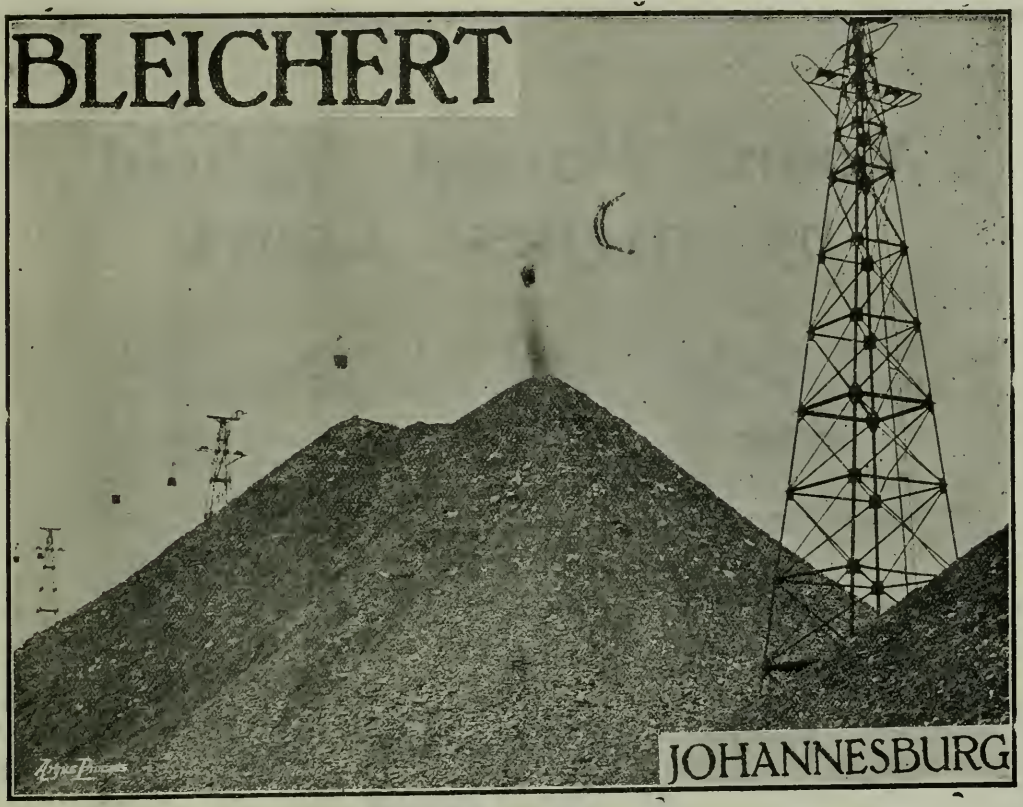

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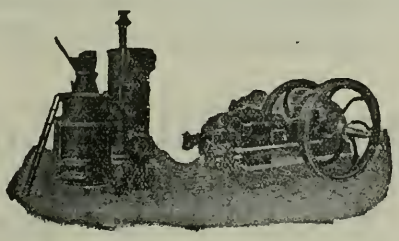

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Moore Patent Upheld by Highest Court

In the case of The Moore Filter Company vs. Tonopah-Belmont Development Company (defended by the Butters Company) the U.S. Circuit Court of Appeals has just handed down a sweeping opinion sustaining the validity of The Moore Process Patent (U.S. 764,486) for filtering slimes, holding the stationary or "Butters" type an infringement, and directing judgment against the defendant for an injunction and an accounting of profits.

From This Decision There Is No Appeal

This patent, now judicially declared valid, is for our basic and fundamental process of filtering slimes by submergence of the filtering medium, drawing away the solution through the filtering medium, and impoverishing or washing the cake by cleansing operation; and anticipates and renders infringements all the various types of filtering apparatus using the process, whether such types be movable, stationary (as in the present litigation) pressure, drum or revoluble.

The Moore Filter Company

New York, U.S.A.

Full text of this opinion will be published in the current issues of all the leading Mining Journals.

To Infringers Of The Moore Patents

After continuous and unwarranted misrepresentations as to the scope of the claims covered by our patents, having finally been awarded a far reaching *unanimous* judgment of the United States Court of Appeals before Judges Gray, Buffington and McPherson sustaining the Moore Process as a fundamental and basic patent, from which judgment there is no appeal, any statement oral or published to the contrary notwithstanding, we wish to inform all users of slime filters whether of the "Movable," "Stationary" (designed as "Butters" or otherwise), Revoluble, Drum or Pressure type, that we still stand ready to enter into agreements with them providing for the use of our patents upon royalties, terms and conditions similar to those we have been making with our licensees right along.

Naturally, this proposition will not long remain open and it is our intention to proceed later on against all who continue to deny our rights, or persist in infringing our patents and to exact payment of the entire amounts made or saved by the unlicensed use of our process.

The Moore Filter Company,

New York, U. S. A., or

HUDSON & FRAMES, Solicitors, JOHANNESBURG.

Butters Patent Vacuum Filters

There is no cause for uneasiness in regard to the recent decision of the Circuit Court of Appeals in the U.S., in the suit, Moore Filter Co. vs. Tonopah-Belmont Development Co., as the following letter from our Attorney clearly shows the narrow limitations of this decision:

New York, Nov. 11, 1912

To the Butters Patent Vacuum Filter Co., Inc.,
50, Church Street, New York.

Gentlemen:

Please find enclosed a copy of the opinion written by Judge Buffington as the opinion of the United States Circuit Court of Appeals for the Third Circuit in the suit Moore Filter Co. against Tonopah-Belmont Development Co., over-ruling Judge Rellstab's decision in the lower court, and holding the Moore process patent valid and infringed. The decision that Moore's apparatus patent is not infringed remains in force.

My colleague, Mr. Kenyon, agrees with me that the serious errors of fact on which the opinion rests will be so obvious to all mining and metallurgical engineers that a modification of the opinion by re-hearing is (so far as it might form a persuasive precedent in other courts) quite unnecessary. As, moreover, the decision is binding as a legal precedent only upon the courts of New Jersey, Pennsylvania and Delaware, which form the Third Circuit, and as it is still subject to review by the Supreme Court of the United States by certiorari it should not give any alarm to licensed users of the Butters patent filters or processes anywhere else.

I strongly urge you to consider the advisability of publishing the two opinions together, thus letting public opinion throughout the world be formed upon full information of the reasoning of the two courts. The carefully studied opinion of Judge Rellstab, based on arguments that were not cut short by time limits, will speak for itself to those skilled in the art.

The other pending suit upon the Butters patents against the Moore Filter Co. is not affected by the present decision, but as the Moore Filter Co. has refused to admit its own responsibility for the use of the Butters acid wash and of reduced vacuum while the filter is exposed to the air, I strongly advise you to immediately sue the infringing users themselves.

(Signed) HAROLD BINNEY.

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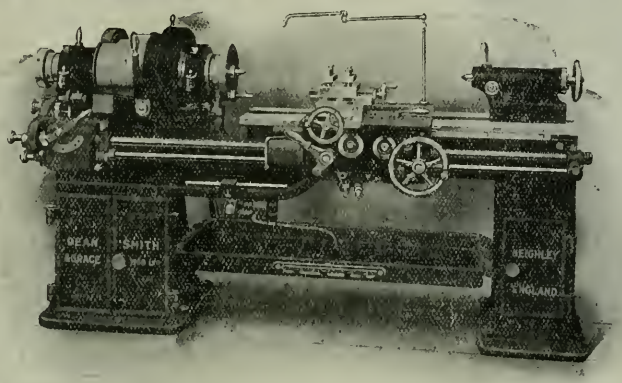

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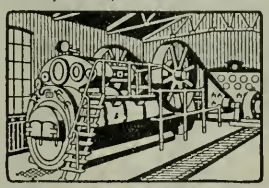

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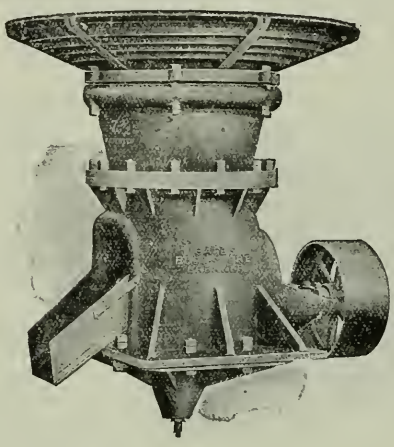

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NOTICE.—The postage of this issue of the *S.A. Mining Journal* is: South Africa, 1d. All other parts, 2d.

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Notes and News.

Vereeniging Activities.

Fifty miles from Johannesburg, on the Vaal River at Vereeniging, quite a busy centre of industrial activity is arising under the ægis of Messrs. Lewis and Marks. To the electric power station of the Victoria Falls Company, the brick and tile works and the extensive farming operations of the Vereeniging Estates, has now been added the beginnings of a steel-making works, and, as the chairman of the Vereeniging Estates remarked in the course of his speech at the annual meeting of that company last week, the place offers excellent facilities for the establishing of other industries. The enterprise named after the place, the Vereeniging Estates, was able to give a good account of the progress of its many-sided activities last week, and the review of industrial affairs included in his speech is of general interest. Coal-mining bulks largest in the sphere of operations carried on by the company, and the account given of the prospects of this industry, as well as of farming, may be taken to apply to both generally.

* * * *

The Diamond Fields.

The returns of diamonds from the south-western districts of the Transvaal, as published in our last issue, again demonstrate the growing importance of this area as a diamond-producing centre. During the past year the number of licences issued has suffered a considerable diminution, and a corresponding decrease has likewise taken place in the number of diggers on the fields; yet notwithstanding this fact the output during the last few months has continued well up to the average of those for the earlier part of the year. During the ten months ending October 31st, 66,229¾ carats of a value of £314,657 were produced, giving an average per month of £31,466; while during November 6,621⅝ carats value £36,504 were returned, so that it will be seen that the output for November is roughly five thousand pounds above the average; a very substantial increase. A conspicuous feature of last month's returns is the rapid progress being made by some of the unproclaimed farms where prospecting is being carried on, some of the returns being really excellent. The latest addition to the list (*i.e.*, the Eastleigh Diggings) seems likely to turn out very well, the majority of the diggers on the ground being quite satisfied with the results of their labours.

* * * *

Rhodesia's 1912 Output.

It seems virtually assured that when full statistics for the year are totalled up it will be found that the mineral output of Rhodesia last year was the largest on record. For the first eleven months of 1912 the gold output of the country has amounted to £2,488,706 and the output of other minerals to £215,148, or a total for all minerals of £2,703,854. This compares with a gold output for the twelve months of 1911 valued at £2,647,895, which with other minerals brought the total output up to £2,890,759. In 1910 the gold production was valued at £2,568,198, and the total mineral production £2,791,128, "other minerals" amounting in value to £222,930. The monthly averages work out as under:—1910: Gold, £214,016; other minerals, £18,578; total per month, £232,594. 1911: Gold, £220,658; other minerals, £20,239; total per month, £240,897. 1912: Gold, £224,428; other minerals, £19,559; total per month, £243,987. It will be observed from the above that the average gold output is higher, the average return of other minerals somewhat lower, and the total for all minerals better by £3,000 per month than in 1911. Assuming that the average production was maintained during December the total gold output for the year should be in the neighbourhood of £2,693,000 and that for all minerals about £2,928,000.

The Earthing of the Neutral.

The paper by Mr. J. S. Peck, which was read at the Institution of Electrical Engineers on November 28th, and is abstracted elsewhere in this issue, is noteworthy for several reasons. The first is that the author appears to have condensed it into so short a space that it is difficult to summarise it any further, all the information available on this important subject. It may have appeared to some that practice was already so standardised, so cut-and-dried, that it would not be easy to impart any interest to the subject; but without intruding his own views too dogmatically, Mr. Peck has contrived to present the question in all its bearings, as it appears to him, and the widspread interest taken in the matter is evidenced by the fact that before the paper was read in London it had already been discussed by the members of the Local Sections of Manchester and Birmingham.

* * * *

The Hay Mine.

Twelve months ago the shareholders of the Hay Gold Mining Company were told that a complete reduction plant with a capacity of 100 tons a day had been brought into commission, " and from now onwards regular returns from the mine may be expected." Early last month, however, the mill was closed down, the available ore of a payable grade having been exhausted. The Hay mine has proved a disappointment at even a shallower depth than the several other Rhodesian propositions whose reefs have " petered out." It appears from the consulting engineer's report that at the Hay's 250 feet level drives were extended " on a well-defined ore body," but the gold contents " proved to be below the payable margin." The property has not been given up as hopeless, though whether the exploratory work being done in the hope of finding some more payable material will be attended with any success is, of course, problematical.

* * * *

Tati Concessions.

The report of the Tati Concessions, Ltd., for the twelve months ended 30th June, 1912, submitted at the meeting on the 20th ult., states that the directors, in presenting the report, regret that they have not been able to hold the meeting earlier. It was hoped that Mr. E. T. Temby, the director in charge of the company's property would have been able to return before the end of the year. The meeting is now called to comply with the provisions of the Companies Acts, but except for the purpose of passing the accounts and the election of directors and auditors, it will stand adjourned until a date to be announced later, when Mr. Temby will attend and personally report to the shareholders. Over 200,000 acres of the company's land have been disposed of to selected applicants under permits of occupation at an average price of about 7s. an acre, and on these lands it is reported that settlers are now investing approximately £100,000. As the shareholders have already been informed, 15,000 acres were sold for £5,000 cash, and since the closing of the accounts an additional 7,000 acres have also been sold on the same terms. The Premier Monarch has always been considered the chief mine of the Tati district, and in past years the company laid out on this mine a sum of nearly £100,000. The scheme referred to at the last annual meeting did not materialise, and, as it seemed impossible to deal with the mine until the outstanding Debentures were acquired, the Board directed their attention to the purchase of these Debentures, with the result that out of a total issue of £44,253, the company are now the holders of £43,808 of the Monarch Company's Debentures. The receiver has been discharged, and the Board of the Monarch Company (who are also the Board of this company) are now in a position to deal actively with the mine.

* * * *

London & Rhodesian Mining & Land.

The report of the London and Rhodesian Mining and Land Company, Limited, for the year ended 30th June last, submitted to the meeting on the 18th ult., shows a net profit of £32,703, which, added to the amount brought forward of £23,065, brings the total available profit up to £55,769. This result the directors consider satisfactory when taking into consideration the indifferent market conditions which have prevailed for some time past. In addition to the foregoing realised profits, the company's share investments (apart from any appreciation in values of properties and ventures), showed at 30th June a further large unrealised profit. The directors have transferred an amount of £14,377 from the available profits to reserve account, making the total amount standing to credit of this account up to £75,000. The directors say they are pleased to be able to report that during the year there has been steady progress throughout Rhodesia. The mining industry has gone ahead on sound lines, whilst the position of agricultural interests has improved. Statistics in regard to the mining industry published by the British South Africa Company show that the output of Rhodesia during the twelve months ended 30th June last amounted to 1,539,915 tons of a gross value of £2,679,448, whilst the dividends declared or paid by Rhodesian mining companies during the same period amounted to £590,311. Of these amouuts the properties controlled by this company, or for whose engineering work the company is responsible, produced 163,602 tons, of a value of £268,088, whilst the dividends declared amounted to £98,720. The tonnage and values of the reserves which had been opened up on properties belonging to companies under the control of this company or belonging to this company, as at 30th June last, amounted to 1,358,295 tons of a gross value of £2,772,942. The general position of the mining industry will, the directors expect, show a very great improvement during the next twelve months.

* * * *

Oceana Squabble.

Mr. C. A. V. Conybeare has now issued a four-page circular, dated Oakfield Park, Dartford, 11th December, to the shareholders of the Oceana Consolidated Company. This documeut is much too lengthy, besides being in many parts unsuitable, for reproduction in our columns. The following extract, however, will give an idea of the argument:—" The Board's circular informs you that it is ' with a view to strengthen the Board by the introduction of a new and highly qualified element ' that three gentlemen are to be proposed to you for electiou as directors. And who are the three new directors you are now asked to vote for? Not one is an independent representative of the shareholders. . . . Sir W. B. Perceval is, with Mr. Ehrlich, a director of the Consolidated Goldfields of New Zealand (one, I believe, of Mr. Ehrlich's promotions) and of other companies controlled by him. Mr. H. D. Boyle is a director of the Luipaardsvlei Estates, a company controlled by and located in Messrs. L. Ehrlich and Co.'s office. Of Mr. Gilmour I need only say that he has, of course, been for several years in service at the Oceana office, the Board being in the habit of appointing him and other officials like Mr. Morton Lambert, an ex-secretary, as their nominees on subsidiary companies. . . . No doubt the intention is to ' strengthen the Board,' but in one sense only. It is to be strengthened by making Mr. Ehrlich supreme, while at the same time ostentatiously withdrawing from the Board his partner, Mr. Hamilton. The Oceana is no longer to be a free company. It will become the ' Tied House ' of the firm of Ehrlich, if you sanction these proceedings by your vote on Monday next. . . . It is my intention at the forthcoming meeting to move an amendment in the following terms: ' That no new directors nominated by the present Board be appointed until the affairs of the company have been examined by a thoroughly independent committee of investigation.' In support of which I ask you to send me your proxies. . . . I am also enclosing a form of application to the Board of Trade for the appointment of an inspector to conduct the inquiry which the directors refuse, as, if defeated at the meeting, that will be the only means available to us shareholders to secure the investigation we demand."

Leeuwkop Diamond Syndicate.

A recently issued prospectus is that of the Leeuwkop Diamond Syndicate, Ltd., an undertaking to be registered in the Orange Free State. This syndicate is being formed to acquire from the vendors their option of the farm Leeuwkop, district Winburg, to further prospect and prove it. Very reasonable terms have been obtained from the owner of the farm, and without undue optimism, the prospectus states, it is felt that the prospects of the syndicate can be considered as very promising. The option carries the right to dispose of all diamonds or any other minerals found during the term of the agreement. The farm is reported to carry excellent diamondiferous indications, and in the event of locating a mine or mines it is proposed to float a company for the proper development and working of the property. The option for prospecting the farm is for a period ending 9th December, 1913, with the right to renew same for a further twelve months on payment of one hundred pounds. The nominal capital is £6,000 in £1 shares, of which £1,500 is working capital, 1,500 shares are in reserve, and 1,500 shares go to vendors. Samples and indications can be seen, and all information obtained at the Secretary's office, No. 40, Permanent Buildings, Harrison Street.

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H. E. Proprietary.

The report of the H. E. Proprietary, Ltd., for the year ended 30th June last, to be presented at the meeting on the 16th instant, states that the expenditure in respect of the upkeep of the properties has amounted to £561, and there has been written off under various headings a sum of £1,041. The revenue of the company during the year was £2,274, and the expenditure in London and South Africa £1,628, showing, therefore, a surplus of revenue of £645. The number of claims held by the company on the Murchison Range and at Palabora is the same as last year. No alteration has taken place in the position of the Murchison Free State Gold Mining Company, in which this company holds eleven-fifteenths of the capital. The advance to this company has been slightly increased. The Blue Jacket property has been leased to a tributor, who has produced a small amount of gold, upon which a royalty has been received. General conditions on the Murchison Range, notwithstanding the approach of the railway, remain unchanged, and the Board have therefore not deemed it advisable to restart work on any of the company's properties on the Murchison Range or at Palabora. An expedition under the supervision of Mr. J. M. Calderwood was sent out during the year to make a geological survey of the Magato concession. This survey has established the existence of promising copper deposits. It is proposed in the next dry season to continue the further exploration of this area. The New Lisbon-Berlyn Company has maintained regular production during the year. Up to the present the company has treated only its oxidised ores; recent experiments give hope that the pyritic ore can also be dealt with successfully. The option which this company, together with others, holds over the reserve shares of the Lisbon-Berlyn Company has been further renewed until the middle of next year.

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Enterprise Gold Mining.

The report of the Enterprise Gold Mining and Estates Company, Limited, for the year ended 30th June last, to be submitted to the meeting on the 18th instant, shows a profit of £24,245, which, added to the amount brought forward, brings the total available profit to £48,641. From this amount the directors have transferred £23,910 to reserve, making the amount set aside under this head £30,000. Conditions of the mining market during the greater part of the year were unfavourable for operations. The directors, however, look forward with confidence to an early revival of interest in the Rhodesian markets, owing to the fact that large ore reserves have been developed in several of the mines upon which reduction plants are now being erected, and which should be in operation during the next twelve months. This will undoubtedly have a marked effect on the gold output.

TOPICS OF THE WEEK.

THE LABOUR OUTLOOK.

The labour prospects for the New Year may safely be described as most promising. The operations of the new Native Recruiting Corporation, which has now completed its first three months of existence, are increasingly successful, and there is reason to believe that its December returns will maintain the rate of improvement displayed in October and November. It will be remembered that the first month's operations of the new organisation resulted in 1,000 more natives being recruited than for the corresponding period of the previous year, when all the mines were recruiting independently of, and in competition with, each other, and the result of recruiting for November was a net increase in the native labour force of over 4,000, as against a loss of 3,700 for the corresponding month of 1911. At the annual meeting of the Van Ryn Estates held recently in London, Mr. Leopold Albu gave a brief but convincing account of the alteration effected by the new co-operative organisation. The change has never been more succinctly described from an official standpoint. He pointed out that formerly the recruiting of natives from certain provinces on the East coast was controlled by the Witwatersrand Native Labour Association; but other parts of South Africa were entirely open for the recruiting of native labour by all and every mining company and individual indiscriminately, with the natural result that as soon as the supply failed to keep pace with the demand, the cost of recruiting rose steadily in proportion. "Each group," he explained, "established its own labour organisation at an enormous cost, large bonuses were given to recruiters, higher wages paid to the natives, and, with the inefficiency which invariably accompanied such a condition of affairs, the cost of native labour was quickly becoming prohibitive to the poorer of the mines. Development work had to be sacrificed, with the unfortunate disorganisation of underground conditions which such a policy must bring in its train, and this was mainly responsible for the apparent lower grade of many Rand mines during the past two years or so. Naturally, all did not suffer alike. Some were fortunate in possessing ample reserves—like the Van Ryn; others were better able to stand the financial strain of getting the greatest proportion of the best labour available. Those mines which were unable to make these sacrifices, however, had suffered severely; and it was to that class of mine particularly to which he looked to prove that, in many cases, the low-water mark in respect of grade and profits to which they had dropped was more or less of a temporary nature. There was good reason to hope that this unsatisfactory state of affairs was likely to give way to a more healthy and normal condition in the near future." Indeed, we shall not be surprised to find the new organisation will be adjudged the outstanding feature of progress on the Rand during last year, and all the annual reports to be issued in the months to come will reiterate and emphasize this fact. At the Van Ryn meeting, for instance, Mr. Leopold Albu took it as his text for the drawing of a roseate picture of the coming year. So far as present indications went, he said, he was very hopeful that the industry would derive benefits in the future from the operations of this new association, which, judging from the continued depression in the mining market, did not yet seem to be appreciated at their proper value. Even if costs were not immediately reduced—though, in his opinion, this could only be a question of time—a regular supply of labour, which they all sincerely hoped would be maintained by the new organisation, must result in greater efficiency. Those mines requiring it could devote their energies to putting their underground conditions in order and extending their ore reserves, which in itself would make for more economic working and improved profits. This was a factor which would play an important part in the progress of their great industry during the coming year. It was one bound to result in improved conditions and higher profits all round, and would bring back that enthusiasm and confidence which were so greatly needed for South Africa and the development of her potential resources.

THE YEAR IN RHODESIA.

No remarkable progress has to be recorded in the history of Rhodesian mining during 1912; neither has there been any noteworthy restriction of operations in so far as mineral production is concerned. The gold output for the eleven months for which returns are available amounted to £2,488,706, as compared with £2,647,895 in the preceding twelve months. The output of coal, chrome iron ore, silver and lead, etc., which in 1911 amounted to £242,864, in the first eleven months of 1912 totalled in value £215,148. The December output is not likely to be very different from that recorded in respect of the November operations, so that it may fairly safely be assumed that the gold output for 1912 will be somewhat in excess of the 1911 return, and will, in fact, constitute the largest output recorded in any one year in the history of Charterland. On the other hand, a slight decrease in the mineral miscellany seems probable, but the total output of all minerals for the year is likely to be greater than the 1911 aggregate of £2,890,759. Although no exact figures as to footage are available, the published reports of a number of the more important mines indicate that there has been continuation of the development policy laid down by the more important mining corporations of the country in 1910 and carried out to such good effect in 1911. The tonnages of ore blocked out in the Shamva at Abercorn, and the Cam and Motor in the Gatooma district are vastly in excess of anything previously attempted in Rhodesia in the way of development, and must tend to give to the country a greater industrial stability. Other mines, too, like the Falcon and the Antelope and the Eileen Alannah, will at no far distant date enter the productive arena. Of the former property we continue to hear excellent reports, and our own knowledge of this mine, gained during an inspection in 1907, makes us regard this gold-copper property as likely to prove a markedly successful mining proposition. Of the Antelope, and more particularly the Eileen Alannah, however, we feel somewhat doubtful. Unquestionably these mines will be able to record good returns for some time after the commencement of milling operations, but whether they will prove themselves to be enduring and really successful mining concerns appears to be open to question. Of the principal productive mines there is not a great deal to report. The Globe and Phœnix, despite serious water difficulties, has managed fairly well to maintain its output and dividends, and has much improved its treatment plant. The Eldorado has had to " trim down " its high grade values to some extent, and at the Giant the position in the lower levels is still problematical. The Lonely has exceeded expectations, is already distributing dividends, and in its three years of existence as a limited liability concern certainly has a fine record to its credit. The failure of the well-known Jumbo mine, in the Mazoe district, although regrettable, has not been surprising; neither have the announcements that the Bucks Reef and Hay mines—once such bright stars in the Rhodesian mining firmament—come as a sudden shock to students of mining in the British South Africa Company's territory. So much for the larger limited liability concerns. The smaller mines, *i.e.*, propositions owned by local syndicates and properties worked on leasehold or tribute, have felt the severity of the drought more acutely than the better established and larger propositions, and in numerous parts of the country there has been wholesale closing down of the smaller mines. In so far as native labour is concerned, 1912 has been an unusual year, and, indeed, at times the reorganised "Bureau" has been unable to place all its recruits. But the shortage of rainfall, which no doubt has been an active and important factor in compelling a large number of natives to seek work—natives who in normal seasons would not leave their kraals—has raised the price of cereals and foodstuffs generally to excessive prices, and what the mines and the farmers have gained from more adequate supplies of natives has been lost in the higher cost of feeding and keeping these natives. The drought, too, has compelled many prospectors to abandon their searches under the very distressing conditions now obtaining over much of Rhodesia, and has brought them back to the towns, already congested with the unemployed of other classes. Apart from gold, there has to be recorded the failure of the Victoria tin field and the opening up of a new cassiterite area to the east of Salisbury. Further large shipments of chrome iron ore have been made from the Selukwe mines, and in Northern Matabeleland the Wankie Colliery has had a busy and successful year. In Northern Rhodesia there has been spasmodic production of copper ores from the hook of the Kafue River and Kansanshi. Broken Hill remains a monument to the optimism of those who thought its highly complex ores could so easily be turned to advantage. In North-Eastern Rhodesia a new goldfield has been found to the west of Fort Jameson, but of its ultimate value nothing can at this juncture be said. Taken on the whole, 1912 has been a rather featureless year for the mining fields of the Chartered Company's territory. Elsewhere in this issue we print the opinions of one or two gentlemen who have just returned from that country. Whilst we do not endorse them to the full in their gloominess, we think that the most Rhodesia can congratulate itself on in regard to 1912 is that the mineral output has been maintained, and that there has been no real abatement of the development policy amongst the larger mines. Otherwise the year has been colourless—or even worse.

PROGRESS OF SWAZILAND.

The annual report on the Swaziland Protectorate for the financial year ended 31st March last has recently been presented to the Houses of Parliament at Westminster. Swaziland is a Protectorate under the South African High Commissioner. Formerly the country was administered by the South African Republic, but an Order-in-Council of the 1st December, 1906, transferred the government to the High Commissioner. The report for the past year indicates a steady measure of progress. There is a surplus of ordinary revenue over expenditure amounting to £3,636, as against £1,803 for the preceding year. A special sum of £190,126 has been spent in the general settlement of concessions, including the partition of rights between the concessionaires and the Swazis. This amount has been met from loans raised for the purpose, amounting to £100,000 and from general revenue. It is estimated that £30,000 of this will be recovered from the concessionaires. The public debt, which amounts to £100,000, is made up of the Swaziland Consolidated Loan, £80,000 at 3½ per cent. per annum. No statistics of imports and exports are now kept owing to an agreement dating from 30th June, 1910, with the Union Government, by which Swaziland for Customs purposes is treated as part of the Union, receiving the proportion of Customs revenue which the average of the collections for three years ended 31st March, 1911, bears to the total Customs collections of the Union in each year. Although we have no figures by which can be estimated the state of trade, at the same time from mining returns the gold and tin output would appear to be satisfactory. During the year, 14,781 ozs. of fine gold have been extracted of the value of £62,783, and 313 tons of cassiterite valued at £32,397, as against 13,543 ozs. fine gold of the value of £57,530 and 476 tons of tin valued at £42,250 for the previous year. Practically the whole output of gold and tin has been exported oversea. The increase in the gold won is principally due to the Pigg's Peak mine which is the largest in the district. Tin occurs in payable quantities in the Mbabane district. Agriculture has received a set-back owing to the want of rain, the natives losing a large percentage of their crops and cattle; but the European farmers, with their more scientific methods, have not suffered so severely, although in many cases considerable loss has likewise been occasioned. According to a census taken in May, 1911, there were 232,596 head of stock in Swaziland, distributed over a population of 1,083 Europeans, 143 coloured, and 98,733 natives. It is generally felt that the construction of a railway is the main factor upon which the future expansion of Swaziland will depend, and at no distant date this will become an absolute necessity if justice is to be done to the undoubted agricultural potentialities of the country.

TRANSVAAL TIN DEPOSITS.—IV.

The Occurrences in the Rooiberg—Interesting Development of Ore-bearing Fissures—Some Points of Difficulty.

The Rooiberg area, which is the most extensively developed tin field in the Transvaal, and appears likely to be the most prolific producer, is remarkable for the fact that all the ore deposits so far worked are found in stratified rocks of the lower Waterberg system. The rock which prevails most widely is a fine grained quartzite, which, according to Mr. R. Recknagel, forms part of a sedimentary formation of great extent and thickness. The superficial extent of this formation is considerable; the thickness has not yet, as far as we are aware, been clearly ascertained. Occasionally layers of shale, varying in thickness between six and eight inches, are found between the quartzites in the mines, although at a higher horizon in the country immediately adjacent, to the north, a larger development of shale is to be observed. "Judging from small specimens only," remarks Mr. Recknagel, "or even from microscopical investigations of some special kinds, one might easily be misled into taking the country rock for an igneous rock of the aplite type. Even microscopically the existence of felspar as a main constituent of the rock, besides quartz, is evident and under the microscope the importance of the felspar is even more apparent. Out of a large number of slides examined, only one showed the constitution of a proper quartzite, all others showed a mosaic of more or less idiomorphic grains of orthoclase and plagioclase, besides fragments of quartz. But the most regular strike and dip of these layers of rocks over large areas, their interstratification with shales and conglomerates, and the existence of ripple marks on some of the bedding planes, leave no doubt that the country rock is sedimentary, either a quartzite with felspar as an original constituent, or an arkose or a greywacke." Dr. Merensky from an examination of hand specimens in the field was at first inclined to believe that this rock was an aplite, and drew attention to the fact that some of the metamorphosed rock found on mine and prospecting dumps in the neighbourhood indicated the close proximity of a related eruptive rock.

The Rooiberg Lodes.

The following description of the lode systems was given by Mr. Recknagel in a paper entitled "On Some Mineral Deposits in the Rooiberg District," which was read in July, 1908, before the Geological Society of South Africa:—"The whole mining field may be likened to a gigantic 'stock-work,' in which the tiny cracks, veinlets and impregnations of the stock-work proper are represented by fissures and lodes of large dimensions, accompanied by impregnations of corresponding magnitude. These lodes strike in all directions, but it seems that several lode systems, each containing a number of lodes with approximately the same strike, may be distinguished, which include the majority of the existing lodes. Up to the present the existence of at least two such systems has been established, one containing lodes with an approximately north-south strike, and the other whose lodes strike west-north-west." These fissures extend, apparently, for long distances, and Mr. Recknagel remarks that it is certainly most uncommon to find an area of sedimentary formation showing such even undisturbed stratification with a dip often approaching the level, and rising rarely over 10 degrees, fissured to such an extent as in this case. There are no intrusions of large bodies of igneous rocks, bending the directly overlying strata, and breaking those further from it, which could be connected with the Rooiberg lodes, nor is there any evidence that at any time the fissured region might have been the crest of a huge anticline. He left the problem to be solved by other investigators, but, as yet, no satisfactory explanation has been offered by anyone. Slickensides met with in many places, he observed, proved that a certain movement had occurred, but wherever it has been possible to ascertain the amount of it, it had been found quite insignificant, to be reckoned by inches rather than feet. The re-opening, or re-rupturing of many fissures after they were filled with lode minerals was established by the finding of brecciated lodes, in which were included angular fragments of pre-existing lode filling.

An Interesting Example.

A case which presents some similar features is that of the contact metamorphic ore deposit at the Dolores mine, near Matéhuala, S.L.P., Mexico, which has been described by Messrs. J. E. Spurr, G. H. Garrey and Clarence N. Fenner in *Economic Geology*. Having described the various periods of mineral deposition which are apparent in this occurrence these geologists add that "one of the most interesting sidelights on this long succession of metamorphic minerals is the evidence that the size of the rock openings gradually increased from first to last—from a condition where the shattered rock showed no continuous fissuring to one where large and persistent fissures were developed. A gradual lessening of the pressure suggests itself as the explanation, and in this case the differences indicated are very great. If, as seems likely, this pressure was that of overlying rocks, which were gradually removed by erosion during the process, then the whole process of contact metamorphism occupied an immense period of time. The period occupied by the ore-deposition with all its various stages, was a very short segment of this total period." Following this line of reasoning, it is explained, it appears that the mountain block, in which the ore deposits are found, began to rise long after the intrusion of monzonite which began the displacement of the rocks, when the downward pressure of the overlying strata, as it was lessened by their erosion, reached the point where it was weaker than the upward pressure of the solidified igneous rock column below, the latter being due to the upward impulse of deeply buried unconsolidated portions of the magmatic column. In the same way it may be considered not improbable that as the upper portions of the Waterberg system were removed by denudation from the Rooiberg beds at its base which lay deeply buried in a hollow in the granite, the fissure system was extended, and with it the period of ore deposition. A process of this kind would explain much that is at present somewhat difficult to understand in the conditions of the Rooiberg tin deposits.

The most important question, from an economic point of view, in connection with the Rooiberg tin deposits in the quartzite formation, is that of the depth which they are likely to attain. It is generally agreed that the red granite, which crops out east and west of the area, underlies the whole formation of the Rooiberg valley, but no attempt has yet been made, as far as we are aware, to ascertain the average depth of the quartzites. Mr. Recknagel, in his paper, said that "The thickness of this sedimentary formation is very considerable. The southern slope of the Elandsberg alone shows a section of about 600ft., and from there southwards for about six miles a continuous series of sedimentary strata, underlying uniformly the Elandsberg strata, is found outcropping." He had carefully traversed this six miles of country, and had come to some broad conclusions as to the thickness of the sedimentary rocks, but probably did not think it advisable to commit his conclusions to paper without having them confirmed by careful measurements. As suggested in the quotation just given, he was of the opinion that, quite apart from the Elandsberg section, which is above that of the Rooiberg Mine section, the question of the depth of the granite was of no very immediate concern to his company.

The thickness of the Elandsberg section, as we have indicated, is of little importance, as far as the producing and developing mines of the Rooiberg are concerned, inasmuch as it forms an upper group of rocks in a succession of which the Rooiberg Mine quartzites form the lower portion. The

geological survey has made an attempt to calculate the thickness of the sedimentary beds in this neighbourhood, and in the report for the year 1908 we find the series represented as comprising about 1,050 feet of beds. Whether this is considered to be a complete section is not stated, but the lower quartzites, above the granite, which show great alteration, and are rich in felspar and tourmaline, are referred to as having a thickness of at least 500 feet. The uppermost bed of this lower portion of the Rooiberg series shows much alteration. "It is a pinkish sandstone," remarks Dr. Humphrey, "also appearing almost granitic in parts, and along this horizon chiefly occur those massive outcrops of tourmaline with which cassiterite is associated so plentifully, and in which the shafts of the Rooiberg Tin Mines have been sunk." In view of the importance of the subject it is to be regretted that the matter of the thickness of the series was not more fully gone into. The lowest shaft of the Rooiberg Tin Mine is at the 310 ft. level, and it is not intended to continue this for the present, the subsidiary exploratory work being carried by means of winzes from the level.

Favourable Conditions.

It is fortunate that the wide extent of ground covered by the tin-bearing fissure system of the area under discussion renders it unnecessary to develop downwards at any great depth. By all appearances the upper horizons of the quartzite in the neighbourhood of the mine now producing are likely to keep the works busy for a very prolonged period. It is possible that similar conditions prevail at Leeuwpoort and other properties, and it will doubtless be the aim of mining companies in that area to expand their operations laterally, as far as possible, rather than in depth. At those points where the payable ore bearing fissures are few in number, or where the strata gradually thin out near the granite contact, the question of depth and of the character of the bodies as they approach and enter the granite will be one of special moment. Although it cannot be doubted that ore will be found in granite from which it was originally derived, there is little reason to doubt that the character of the deposits in it will be modified considerably.

RANDFONTEIN DIVIDENDS.

Long Promised Distribution at Last Announced—Turning Point in the Career of the Great West Rand Proposition.

The announcement of five per cent. dividends by the Randfontein Estates Gold Mining Company (Witwatersrand), Limited, and the Randfontein Central Gold Mining Company, Limited, marks a highly important development in the history of that enormous proposition lying to the south and west of Krugersdorp and generally known in abbreviated form as "Randfontein." The interests of the Randfontein Estates Company and of the Randfontein Central are practically identical. Randfontein Estates originally floated off a dozen subsidiary concerns to deal with the mining area, and in addition to these—now all included in the Randfontein Central—owns five freehold farms, one leasehold farm with full owner's rights, and the Randfontein township. Neither the Randfontein Estates nor the Randfontein Central had until the end of 1912 made any cash distribution amongst shareholders, but there was a bonus distribution of one Porges Randfontein share for every five Randfontein Estates shares in June, 1896, and in January, 1907, shareholders received by way of dividend one fully-paid Randfontein Estates Trust, Limited, share for every ten shares held.

The First Declaration.

The Randfontein Central, although a number of the mining properties now included in it were floated more than 20 years ago, had, previous to the past few days, distributed no dividend of any kind amongst shareholders, and the announcement of a payment of 5 per cent. to shareholders registered on December 31st must be regarded as an historical event of first-rate importance to the West Rand. The authorised and issued capital of the Randfontein Estates is £3,001,089, and the distribution of the parental concern, therefore, involves the sum of £150,054. In the case of the Randfontein Central the amount to be distributed is £200,000, the authorised capital being £4,500,000 in 4,500,000 shares of £1 each, of which 4,000,000 are issued and fully paid. Although at the beginning of 1912 the outlook on the West Rand was far from hopeful, there has for some months past been evidence of ability to pay a dividend in respect of the past year's operations.

Year's Profit Probably About £880,000.

For the first nine months of 1912 there were crushed 1,866,776 tons for a revenue of £2,290,166, equal to 24s. 6·43d. per ton milled. The total working costs were at the rate of 17s. 10d. per ton or £1,662,970 in the aggregate, and the profit amounted to £627,195, or just one-third of a sovereign per ton. In October, with 750 stamps at work, the operating expenses were reduced to 16s. 10d. per ton, and a profit of £84,662, or 7s. 9d. per ton was earned. In November the profit was £84,635, or 8s. per ton. It looks as if the total profit earned by the company for the past year has been in the neighbourhood of £880,000, or about two-thirds of a million in excess of the amount distributed amongst shareholders. In this connection, however, it should be borne in mind that there are £832,500 five per cent. debentures, repayable by ten annual instalments, commencing January, 1910, or at the company's option at any time at 103 per cent. upon giving six months' notice. There is also a loan of two millions sterling bearing interest at the rate of 6 per cent. per annum and repayable by annual instalments commencing March 1st, 1914, and ending March 1st, 1933. Both debentures and loan are held by the Randfontein Estates Company. Evidently the directors of the Randfontein Central Company have refrained from paying out a larger sum amongst shareholders, as it would appear they might have done, in order to build up a strong financial position and discharge the Randfontein Central's liabilities without impeding future dividends. It may be recalled that in January last it was announced that the estimated profit for 1911, viz., £860,000, was to be applied in meeting heavy capital expenditure (amounting to £657,000), debenture interest, amalgamation expenses, etc., but that a substantial dividend would be paid during 1912.

The Turning Point.

The profit earned during the past twelve months is, of course, subject to deduction on account of profits tax and debenture interest. Notwithstanding a certain disappointment that may be felt in some circles that not more than 5 per cent. has been announced, it is most gratifying to find that at last the long promised dividends have been announced by the Randfontein Estates and Randfontein Central Companies and that in addition the finances of the Randfontein Central Company have been greatly strengthened. As to the development position, it is of interest to note that the ore reserves at September 30th last were 6,653,101 tons, as compared with 6,637,271 tons at the end of 1911. Despite the fact that in the earlier months of the year the position was none too good, the profit-earning operations have improved remarkably since April last. The year 1912 may be looked upon as the best that has been experienced in the history of Randfontein. In fact 1912 may be regarded as marking the turning point in the history of the great West Rand proposition.

THE 1912 DIVIDEND LIST.

Gold Mines Pay Out Eight and a Third Millions—Diamonds £360,000, Collieries £284,907, Tin Mines £108,700—Some Substantial Increases—Transvaal Gold Mines Total to Date Ninety-one and a Half Millions.

With the declaration of dividends by the Randfontein Central and Randfontein Estate Companies, it now is possible to state in exact figures the amount of money distributed by the gold mines, financial corporations and other mining and financial concerns of the sub-continent. The total for Transvaal gold mines amounts to £8,331,575, which is £265,139 greater than the amount declared at the end of December, 1911, in respect of that year's operations. The total for the Witwatersrand amounts to just over eight millions sterling—to be precise, £8,000,493—which is an increase of nearly a quarter of a million (£237,407). Outside districts gold mines paid out for 1912 the sum of £331,083, or £27,732 more. The five Rand gold mines that announced a first distribution for the year (Bantjes, Brakpan Mines, City Deep, Modderfontein B and Randfontein Central) paid out in the aggregate £862,444. Individual increases and decreases according to groups were given in our last issue.

The following list states the dividends declared by Transvaal gold mines to date:—

	Dividend.		Dividend.
1887 ...	£12,976	*1901 ...	£422,413
1888 ...	127,352	1902 ...	2,127,726
1889 ...	461,644	1903 ...	3,368,837
1890 ...	299,557	1904 ...	3,938,802
1891 ...	355,600	1905 ...	4,859,717
1892 ...	974,041	1906 ...	5,741,761
1893 ...	1,042,539	1907 ...	7,098,212
1894 ...	1,727,433	1908 ...	8,757,882
1895 ...	2,218,402	1909 ...	9,523,518
1896 ...	1,743,632	1910 ...	9,130,958
1897 ...	2,956,981	1911 ...	8,066,437
1898 ...	4,996,510	1912 ...	8,331,575
1899 ...	3,211,766		
*1900 ...	6,600		£91,502,871

* War period.

Name of Company.	Date of Declaration.	Rate per Cent.	Rate per Share.	Amount Distributed and to be Distributed.		Issued Capital.
			s. d.	£	£	£
Johannesburg Consolidated Investment Co.	June 18	5	1 0		197,500	3,950,000
Kleinfontein Estate	Mar.	7½	1 6	6,375		
Do.	June	5	1 0	4,250		
Do.	Sep.	5	1 0	4,250		
Do.	Dec.	7½	1 6	6,375		
					21,250	80,000
Pretoria Portland Cement	June	20	4 0	30,000		
Do.	Dec.	20	4 0	30,000		
					60,000	150,000
New Era (5s.)	Dec.	10	0 6		10,000	100,000
			per 5s.			
Rand Mines (5s.)	June	110	5 6	584,649		
			per 5s.			
Do.	Dec.	110	5 6	584,649		
			per 5s.		1,169,298	531,499
Randfontein Estates	Dec. 28	5	1 0		150,077	3,001,540
Elandsfontein Estate	Dec.	5			1,500	30,000
Witwatersrand Township	Oct.	15	3 0		20,000	200,000
Consolidated Gold Fields	Mar.	7½	1 6	150,000		
Do.	Nov.	10	2 0	200,000		
Do.	1st pref.	6		75,000		
Do.	2nd pref.	6		75,000		
					500,000	2,000,000 (ord. shares)

In regard to diamonds, the Premier—the only diamond mining concern in the Transvaal declaring dividends—paid out £360,000 last year, or £60,000 more than in 1911. The total for collieries is £284,907, or £34,405 in excess of the 1911 total. On the other hand the tin industry paid out £108,700, as compared with £163,250 in the previous year—a decrease of £54,550. For gold, diamond, coal and base metal mines the total is just over nine millions sterling (£9,085,182), an increase on the amount distributed from the same sources in 1911 of £304,894. In order to complete our usual dividend schedules we print a statement of the amounts distributed amongst shareholders in the principal financial industrial and land companies during the past year.

Falcon Mines.

The report of Falcon Mines, Ltd., for the year ended June 30th states that, including 100,000 tons of ore already exposed between the fifth and sixth levels, the total ore reserves at that date were about 730,000 tons containing a total estimated value of £1,757,000, or, on the basis of the present price of copper, over £2,100,000. The tonnage partly blocked out, but not included in the actual reserve, it is stated, is fully as great as it was in the previous year. The erection of the plant to deal with 500 tons per day is being proceeded with, and the engineers hope to have the complete plant at work before the end of 1913. On the basis of the average value of the ore so far developed, with working costs at 35s. per ton and with copper at £56 per ton, the profit, when the present plant is completed, should exceed £120,000 per annum, or, with copper at £75 per ton, £225,000 per annum.

THE POSITION OF THE KNIGHT CENTRAL.

The Borehole Traverses the Dyke—Why the Dividend was Passed.

When the dividends of mines under the control of S. Neumann and Co. were announced three weeks ago it was conspicuous that no declaration was made by the Knight Central Co. It was then stated that the Board of Directors considered it advisable to maintain the company's strong financial position until information had been obtained as to the probable value of the development south of the dyke and the expenditure necessary to open up that section of the property. The dyke in question is known as the Simmer and Jack dyke and was intersected in both the west and east incline shafts during the September quarter. At the west shaft a borehole was put up to determine the exact thickness of the dyke and also to locate the position of the upthrown portion of the reef. We have now been favoured with the following communication from the company as to the result of drilling operations:—The borehole through the Simmer dyke on the Knight Central property has been completed and has proved the reef to be upthrown on the south side of the dyke. In consequence of this, and despite the delay necessitated by crosscuts through the dyke, development operations south of the dyke can be proceeded with at such a rate that it is confidently anticipated that there will be no interference with the continuation of milling operations on the present scale. Assays of the borehole core over corrected widths are as follows:—Main Reef, plus bastard reef, 60 inches, 2 dwts.: South Reef, 46 inches, 4½ dwts. No further information regarding the value of the reef south of the dyke can be obtained until driving on the reef will have started from the cross-cuts, during the second quarter of 1913. The working profit of the company for November at £4,025, or 3s. 5d. per ton, compares favourably with that announced in respect of the January, 1912, operations when £2,929, or 2s. 5d. per ton, was secured. The report of the company for the last quarter (ended September 30) stated the essential features of the operations for the three months to be as follows:—Tons milled, 69,820; gold recovered, 20,386·379 ozs.; revenue from gold, £85,449; total working expenditure, £69,279; cost per ton milled, 19s. 10·14d.; profit for quarter, £16,170; profit per ton milled, 4s. 7·58d.; capital expended, £9,871. On shaft sinking and stations, the east shaft has been sunk 153½ ft. to a total depth of 4,380½ ft., or to 154 ft. below the 15th level. The last 50½ ft. have been sunk in dyke. One hundred and sixty-five feet of sills have been put in to a depth of 4,308 ft. The west shaft has been sunk 190½ ft. to a total depth of 4,289 ft., or to 346½ ft. below the 13th level. The last 292 ft. have been sunk in dyke. Ninety feet of sills have been put in to a depth of 4,665 ft. On development work there were driven, risen, sunk and on prospecting work a total of 2,305 ft. The reef values were: Exclusive of main crosscuts, ore passes and prospecting work, 1,280 ft., or 83·81 per cent., of the development work has been on reef. Altogether 1,665 ft. have been sampled, comprising 880 ft., or 53·0 per cent., averaging 8·03 dwts. over an estimated stoping width of 62·84 ins., and 785 ft., or 47·0 per cent., averaging 1·88 dwts. over 62·12 ins. In this former total is included 345 ft. of main reef at 7·50 dwts. over 57·72 ins., 525 ft. of south reef at 8·34 dwts. over 66·62 ins., and 10 ft. of main reef leader at 7·91 dwts. over 41 ins. Ore Reserves: The payable ore exposed as at 30th June was 658,000 tons at 6·05 dwts. over 60·77 ins.; payable ore exposed or developed during quarter ended 30th September was 48,500 tons at 6·90 dwts. over 70·63 ins.; making a total of 706,500 tons at 6·11 dwts. over 61·36 ins.; less ore mined from payable blocks during quarter ended 30th September, 1912, 52,900 tons. The total ore reserves at 30th September were 653,600 tons at 6·11 dwts. over 61·36 ins. Extensions have been made to the change room for Europeans at the west shaft, and a change room for natives has been built at the east shaft.

Swaziland Corporation.

The report of the Swaziland Corporation, Ltd., for the twelve months ended 30th September, 1912, presented at the meeting on the 16th ult., is of the grandiloquent description. It states that a considerable amount of development work has been carried out on the properties, principally on the Forbes mineral concession. During the latter part of last year the directors felt the necessity of appointing a qualified resident engineer to supervise the work then proceeding, and in January last Mr. G. F. Heath, A.R.S.M., A.I.M.M., was appointed to this position. On the receipt of Mr. Heath's report the fullest consideration was given to his recommendations, and, having regard to the financial position of the company, it was decided to concentrate work on the Ivanhoe mine and the alluvial tin, as these, in his opinion, gave the most promising indications. The manager was accordingly instructed to proceed vigorously with the work on these properties, under the technical supervision of Mr. Heath, and the work on the remaining properties was temporarily suspended. A considerable amount of work was done on the Forbes main reef mine with the object of proving it at depth, but the results obtained showed that very heavy expenditure would be necessary to thoroughly prove it, and, under the policy of concentration, work on this property was stopped. During the year work has been continued on the tin properties with continued encouraging results. In July last work was suspended on the main reef tin owing to the comparatively heavy expenditure which a thorough investigation would have necessitated. During the last few months work has been much hampered on the tin alluvial owing to lack of water, caused by an exceptionally dry season. In spite of this, however, and of the energies of the staff having been principally devoted to the gold properties, two tons of tin ore have been forwarded to this side. The first ton realised £137 net, and the second ton is now in transit. It is practically proved that the company possesses a valuable and extensive tin-bearing area, and the question of the best method of dealing with this interest is being carefully considered by the directors. A test of the Mhlosheni gold alluvial property, extending over an area of some 67 acres, was made by the resident engineer. Sluicing tests gave the value of the gold at 2s. 4d. per square yard, and, basing the value on 1s. 9d. per square yard, and the value of the tin ore which is also found in this area at £6,500, the manager estimates that this area represents a value of £40,500, which, after deducting working costs, should give a profit of £22,800. At the date of this report only one of the properties is let on tribute—namely, the Daisy mine—Horo concession. The royalty and licences received from this mine during the year amounted to £609. At the 30th September, 1912, the value of the liquid assets of the company was £12,256. The decrease in this figure as compared with last year is due to the comparatively heavy expenditure on development work carried out on the mining properties, in pursuance of the policy indicated at the last general meeting. The profit and loss account for the year shows a debit balance of £2,971, including £1,172 written off in respect of depreciation of machinery, plant, etc., in accordance with the manager's recommendations.

Eastleigh Diggings.

The Eastleigh diggings were thrown open on December 28. From an early hour people began to congregate on the spot, and as the time of opening approached a large concourse number fully seven or eight hundred collected. Over 400 licences were issued. Most of the original workers secured claims which they had previously worked.

THE MANAGER AND STAFF OF THE NOURSE MINES.

Front Row.—Left to Right: J. Livingstone (Storekeeper), W. G. P. Cobbett (Surveyor), S. Beaton (Mine Captain), W. Windward (Mine Captain), E. T. Denby (Engineer), J. Russell (Secretary), P. W. Sherwell (Underground Manager), R. A. Barry (Manager), D. S. Leech (Underground Manager), J. F. Pyles (Reduction Officer), W. J. Pope (Mine Captain), W. H. Perrow (Chief Electrician), C. Y. Brabant (Compound Manager), J. A. O'Reilly (Shift Boss), —. Born (Shift Boss).

Second Row.—E. F. Yeoman (Assistant Coloured Timekeeper), W. Nicklin (Assayer), J. H. H. Watermeyer (Assistant Surveyor), R. J. Cowie (Assistant Compound Manager), G. F. G. Farrell (Assistant Sampler), E. J. Murphy (White Timekeeper), W. D. Maxwell (Coloured Timekeeper), J. B. K. Dodds (Battery Foreman), D. S. Brown (Workshop Foreman), J. R. Douglas (Shift Boss), W. A. Winkler (Caretaker), E. D. Taunt (Clerk), T. H. Duthie (Cyanide Foreman), A. P. Croxford (Battery Foreman), J. Holman (Foreman Smith), A. G. Lewis (Foreman Timberman), C. A. Mader (Foreman Electrician), T. Odgers (Shift Boss), B. P. Mosenthal (Shift Boss), R. B. Webber (Shift Boss). A. F. Booth (Shift Boss).

Third Row.—A. Silberstein, W. E. Cowling (Clerk), J. Noble (Foreman Fitter), F. S. Finnis (Assistant Secretary), J. T. Spotswood (Native Hospital Attendant), H. D. Scott (Foreman Mason), W. E. Kelly (Foreman Drill Sharpener), S. Williams (Foreman Boiler Maker), J. G. Thompson (Mine Captain's Clerk), J. Pascoe (Shift Boss), W. H. Odgers (Cyanide Foreman), B. E. Auget (Shift Boss).

THE MINES OF ANCIENT MANICALAND.

Relics of an Unknown Past—Rich Alluvial Deposits—Gold and Iron Workings.

A VERY interesting description of the ancient workings of Manicaland occurs in the report of Colonel (then Captain) d'Andrade on the Macequece mining field, published in the Monograph of the Companhia de Moçambique. "In the course of prospecting work (wrote Colonel Andrade) that I have had carried out I have had occasion to verify the enormous extent of ancient workings. These are to be met with almost everywhere, in all the valleys, and even very often on the sides as well as on the summits of the hills. In the alluvial deposits these ancient workings consist of shafts sunk to the bed-rock, or as far as the level where water was encountered; in these cases the pay-wash lying above the water level was washed and the rest was abandoned. The shafts are almost all of a cylindrical shape, often widening out towards the bottom. In many localities, where the shafts were put down close together, the pillars of ground which divided one from the other were removed and washed, and the spaces they have occupied were filled in with large stones, so well placed that several of these fillings-in remain even to this day in a good state of preservation. Where the bedrock was found close to the surface, at a depth of only two or three metres, shafts were not sunk, but, instead, all the ground was taken out in enormous funnel-shaped excavations, sometimes more than thirty metres in diameter, the auriferous deposit which was thus exposed being subsequently washed. In some cases also galleries were driven close to the bed-rock following what was probably the course of some lead that was richer than the rest, and driven in such a manner as to facilitate the drainage of the water. These galleries are driven along the sides of slopes, and are rarer than works of other descriptions: they are to be met with on the Zambusi. Especially in the case of reef outcrops the old workings took the form of shafts, sometimes of great depth, viz., from 20 to 40 metres, and off these shafts short galleries were driven. I have never found ancient tools left at the bottom of workings. I have only found an old spade in some cultivated ground on the Muza very similar in appearance to those that the Kaffirs use at the present time. This spade was buried at a depth of two metres underground, and almost eaten away by rust. It is true, however, that as I was anxious not to incur great expense I have very much restricted my exploration work, and it is probable that if work is begun on the alluvial deposits other sorts of tools will be met with. Side by side with the remains of workings carried out with the object of obtaining gold, others are to be met with which prove that iron was produced in this country on a large scale. The ores used appeared to have been more especially the ferruginous quartzites and some rather impure limonite that are to be found in the district. No fluxes that could have been used are to be met with here, and the amount of silica which occurs in these ores, that contain at the most 20 per cent. of iron, accounts for the very large quantities of ferruginous slag that is to be found in heaps in several different places, and also accounts for the numerous well-built furnaces (*tuyères*) in fireproof clay that are to be seen everywhere. In some cases the slags conceal several furnaces (*tuyères*) grouped together anyhow. The system of metallurgical treatment employed must have been analogous to the "Catalene" process, and it is probable that the quartzites that were richest in iron were selected for treatment, and that they underwent a sort of rough washing. Forges of a sort must also have existed. In the Inhamucarara, on a spur of the Vengo mountain, thousands of tons of slags and traces of large villages are to be met with. I have seen there the remains of a sort of cupola-furnace (*four à manche*) with ducts built of stones and bricks joined together by a sort of fireproof clay. Unfortunately the whole furnace lay buried under rubbish, and was in such a ruined condition that I was not able to reconstitute it as it must have originally appeared. It is therefore certain that formerly the iron industry flourished side by side with the gold industry, and probably all the tools required for the latter were made in the district. The remains of ancient dwellings, different from present Kaffir dwellings, are frequently met with, but up to the present I have met with no extensive ruins like those of the Zimbabye (Zimbavé) or those of Northern Mashonaland with their bizarre ornamentations. The ruins are of two kinds—those whose builders I am unable to identify, and those which are undoubtedly of Portuguese origin. I am unable to deduce from what I have seen any indication that might throw light on the question as to what race it was that first began working for gold in this district. But what I consider as certain is that the Portuguese, attracted hither by the gold production of the district, settled here, and took into their hands the direction of the gold production, and I think that it is to them that a large proportion of the workings are to be ascribed."

THE YEAR WITH THE VAN RYN GOLD MINES ESTATE.

Dividend Declarations—Labour and Water Questions—Mr. Leopold Albu Says "The Corner is Turned."

THE meeting of the Van Ryn Gold Mines Estate, Ltd., was held on December 11 at Winchester House, London, E.C., Mr. F. A. Gillam (chairman of the company) presiding.

The Chairman said: Gentlemen,—I do not think there is anyone here who will not agree with me that the report and balance sheet before you are the most favourable we have ever had the pleasure of presenting to you. In spite of labour difficulties and the reconstruction work accomplished, we have not only been able to maintain our dividend distribution, but we have actually increased our profits, and have made our financial position so satisfactory that, looking at the balance sheet, you will see that there is a surplus over all liabilities of £36,120 1s. 9d., as compared with £24,329 6s. a year ago. I am glad to say that expenditure on renovation work is practically at an end, and we do not anticipate any great addition during the current year.

INCREASED ORE RESERVES.

With regard to the operations at the mine, steady progress has been shown all along the line. We have increased the tonnage milled by 64,300 tons. We have increased the duty per stamp per diem from over 9 tons to over 10 tons. The gold recovery has been 8,499 ozs. more, of an increased value of £36,010 0s. 7d. More important still is the fact that at June 30 last we had increased our ore reserves by 408,534 tons, while the grade of ore is slightly increased also. It is needless for me to again emphasise the fact that this huge ore reserve has been paid for out of past profits. It stands in the books at nothing. As to the future, all I can say is that up to now we have no reason whatever to doubt that the present prosperity of the company will continue steadily over a long period.

DIVIDEND ANNOUNCEMENT.

The native labour supply has improved during the year. We have had an average during that period of 2,657 native labourers and an average of 282 whites, while at the end of October our native labour complement was 2,686 with 278 whites. Under the new conditions for the recruiting of native labour referred to in the managing director's and manager's reports, the complement allotted to us has been increased. We have been asked more than once to publish the value of our development in our quarterly reports. The suggestion has been referred to the managing director and is engaging our attention. I am happy, gentlemen, to be able to announce that we have declared to-day a dividend of 22½ per cent., less income tax, for the half-year ending December 31, 1912, warrants for which will be issued to all shareholders on the register at December 31 on January 10, 1913. I have now one word to say upon matters of internal interest. You will

perhaps like to hear that it has been decided to fill the vacancy on the board caused by the death of Mr. John Seear by the election of Mr. Stuart Hogg, who has acted as the secretary of your company for the past 18 years. During this time he has carried out his duties to the complete satisfaction of the board, and I think I may confidently say of the large body of shareholders also. I ask you to allow me, as usual, to waive the formality of reading the report and balance sheet. If I may take them as read, I will move their adoption and ask Mr. Leopold Albu to second the resolution.

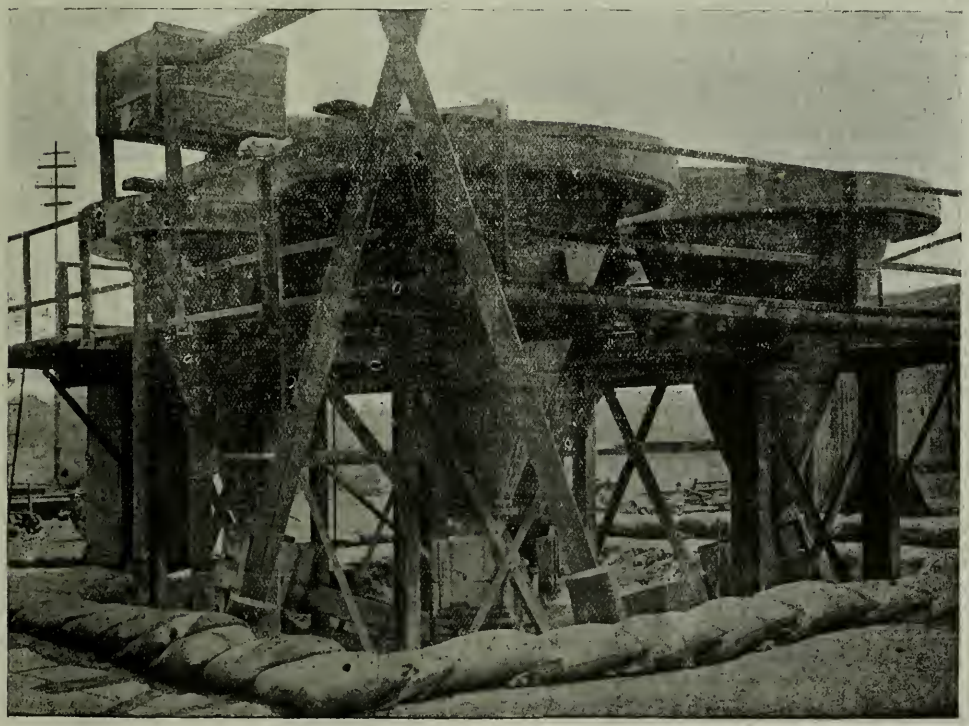
MR. LEOPOLD ALBU'S SPEECH.

Mr. Leopold Albu, in seconding the adoption of the report, said: The Company has achieved a position, both financial and technical, which is hardly surpassed by any mining or industrial concern in South Africa—or, for the matter of that, anywhere else—and because the elements of continued prosperity for many years to come are all so well established. The achievements in the past speak for themselves. From 1905 to 1908 the company paid dividends gradually rising from 20 per cent. to 35 per cent., whilst for nearly five years now it has made a regular distribution of 45 per cent. per annum. As to the future, the great elements of strength are to be found, firstly, in the excellent financial position of your company, and, secondly, in the position of its ore reserves. On referring to page 17 of the manager's report you will see that the tonnage mined is scheduled under six divisions (excluding division faces), which on being analysed shows four distinct reefs. The effect of this is that the ore contents per claim in the Van Ryn are simply enormous as compared with the majority of other mines on the fields, with generally one or two reefs at the outside. In the foregoing remarks I have taken no account of South Reef. You have been kept informed of the progress of work on this reef in the No. 3 section since exploratory work was commenced. The whole work done to date on this reef shows the exceedingly encouraging average value of upwards of 11 dwts. over more than 1,000 feet.

THE LABOUR QUESTION.

I have endeavoured to outline the position and prospects of your company, but there is another feature of more general interest which, I am sure, has been as much worry and anxiety to you as to all those on whose responsibility this great industry rests. It is the oft-discussed but all-important labour question. The struggle for labour brought with it the engagement of a large number of natives naturally of low physical standard, and generally unsuitable for the arduous work of mining. More than that, the native became well aware that his services were competed for at a gradually increasing rate of pay and bonuses. This resulted in precisely a similar condition of affairs to that which would be the case if white labour were concerned, namely, continually rising wages and decrease in efficiency, and it is the latter which more than anything else plays havoc with an industry. In the case of the mines it increased the working costs to a level at which the poorer mines could not operate profitably. I am pleased to say there is good reason to hope that this unsatisfactory state of affairs is likely to give way to a more healthy and normal condition in the near future. As most of you are no doubt aware, the organisation of the Native Recruiting Corporation has recently been completed. The first month's operations of the new organisation resulted in a thousand more natives being recruited than for the corresponding period of the previous year, when all the mines were recruiting independently of and in competition with each other, and I had a cablegram the day before yesterday stating that the result of recruiting for November was a net increase in the native labour force of over 4,000, as against a loss of 3,700 for the corresponding month of last year. There is just one other matter on which I feel I should say a few words, and that is in connection with the water supply of the Rand. In order to augment the present supply, and to prepare for the future increased requirements of the mines and townships, a catchment scheme has now been decided upon which will double the present supply in some four years' time. We have, gentlemen, been passing through a long period of depression—but if indications go for anything, then I am convinced that we have turned the corner. I feel sure that South African securities have reached a level which is not at all justified by the results obtained from a great many mines, including your own.

SAND-FILLING AT THE SIMMER & JACK.



VIEW OF THE SAND-FILLING PLANT ON THE SURFACE.

ORIGIN AND ACCUMULATION OF OIL.

Early Views on the Anticlinal Theory—Some Necessary Modifications—Conditions in Saturated and Unsaturated Rocks.

So much has the question of the occurrence of payable oil in South Africa been discussed from time to time that the following notes taken from an "Historical Review of Theories Advanced by American Geologists to Account for the Origin and Accumulation of Oil," which was read as a Presidential Address by Marius R. Campbell, of the United States Geological Survey, before the Geological Society of Washington, may serve to throw some interesting light upon a subject which is apparently little understood. After a brief review of the progress of discovery and thought in connection with oil occurrences, Mr. Campbell proceeds:—Although Hunt as early as 1861 had stated in a general way the anticlinal or structural theory of the accumulation of oil and gas, and Hoffer[1] had in 1876 called attention to the fact that in Canada, Ohio and West Virginia, the greater quantity of the oil occurs on the anticlines, to Dr. I. C. White belongs the credit of formulating this theory, of working out many of its details, and of applying it in a practical way in locating new and undeveloped fields. White, in discussing[2] the introduction of this theory, states that it was not new at that time (1885), but that it had never been formulated in such terms as to be intelligible to the layman and hence of practical value. In making the investigations upon which this theory was founded, he was assisted and even prompted by Mr. William A. Earseman, an oil operator. White began this work in 1883 and was soon convinced that the theory would account for most of the facts observed in the Pennsylvania gas fields but he did not feel sufficient confidence in his theory to publish it until 1885.[3] As there have been so many statements published recently concerning this theory it may be well to quote some of the most important parts so as to understand clearly what White meant by the anticlinal theory in its first inception. "After visiting all the great gas wells that have been struck in western Pennsylvania and West Virginia, and carefully examining the geological surroundings of each, I found that everyone of them was situated either directly on or near the crown of an anticlinal axis, while wells that have been bored in the synclines on either side furnish little or no gas, but in many cases large quantities of salt water. . . . But while we can state with confidence that all great gas wells are found on the anticlinal axes, the converse of this is not true, namely, that great gas wells may be found on all anticlinals. In a theory of this kind, the limitations become quite as important as, or even more so, than the theory itself; and hence I have given considerable thought to this side of the question, having formulated them into three or four general rules (which include practically all the limitations known to me, up to the present time, that should be placed on the statement that large gas wells may be obtained on anticlinal folds), namely, (a) the arch in the rocks must be one of considerable magnitude; (b) a coarse or porous sandstone of considerable thickness or, if a fine-grained rock, one that would have extensive fissures, and thus in either case rendered capable of acting as a reservoir for the gas, must underlie the surface at a depth of several hundred feet (500 to 2,500 feet); (c) probably very few or none of the grand arches along the mountain ranges will be found holding gas in large quantity, since in such cases the disturbance of the stratification has been so profound that all the natural gas generated in the past would long ago have escaped into the air through fissures that traverse all of the beds; (d) another limitation might possibly be added, which would confine the areas where great gas flows may be obtained to those underlain by a considerable thickness of bituminous shale; (e) very fair gas wells may also be obtained for a considerable distance down the slope from the crests of the anticlinals, provided the dip be sufficiently rapid, and especially if it be irregular or interrupted with slight crumples. And even in regions where there are no well marked anticlinals if the dip is somewhat rapid and irregular, rather large gas wells may occasionally be found, if all other conditions are favourable."

Limitations of the Theory.

Although it is not clearly stated that this theory applies only to saturated rocks, any one familiar with conditions in the oil fields of Pennsylvania and West Virginia would not question for a moment that such is the case. It seems probable that White had not at that time encountered dry rocks yielding oil and gas and consequently it did not occur to him to limit his theory to the conditions of saturated rocks, but it is evident from his reference to salt water in the synclines that he intended to apply it to such a condition. Neither did White at first apply his theory to account for the accumulation of oil, but it is equally evident that he had this in mind and to him whatever theory would account for the accumulation of gas would also account for the accumulation of oil which differs from gas only in its physical condition and its specific gravity. White's contribution to the subject of the mode of accumulation of oil and gas while covering only one phase of the problem still must be ranked as one of the greatest results achieved by modern geologists not only in its scientific bearing but also in its great practical value to the prospector and operator. For the first time since the discovery of oil and gas in commercial quantities the geologist could apply scientific rules to the solution of the problem and the extension of partially developed pools could be predicted with considerable certainty. It is needless to say that the anticlinal theory did not meet with the general approval of geologists, as in most movements of this kind each advance is opposed by some worker who will not admit that his own theory is wrong and the theory proposed by another is correct. . . . The greatest supporter of White and the anticlinal theory was Dr. Edward Orton, State Geologist of Ohio, who soon demonstrated that this theory was applicable to the great oil fields of Ohio and his advocacy practically settled the question that when the conditions are similar to those postulated by White the anticlinal theory applies. . . . Orton's great work with regard to gas and oil seems to have been in seconding White in the demonstration of the adequacy of the anticlinal theory. In doing this, however, he found that certain modifications were essential in applying it to the Ohio fields. His most important addition was the recognition of " terrace " structure as favourable to the accumulation of oil. As stated by White the theory provided for the accumulation of oil and gas only in anticlinal structures. In Ohio Orton found that oil and gas has not only accumulated in the crowns of the arches but also in many places on the flanks of the fold where the dips are arrested for some distance forming a structural terrace. On this terrace the oil tends to accumulate on the outer edge if the oil is moving upward and on the inner edge if it is moving downward, and some of the great fields of the state are thus located. . . . Orton's first statement regarding structural terraces is as follows:[4] "In the old fields and in the new alike, irregularities of dip, involving change of direction, suspension, or unusual increase, have been found connected with the large production of both oil and gas in every instance where careful examination has been made. The composition of the series involved is identical for many thousand square miles, but so long as uniformity of dip is maintained, there is no valuable accumulation. As soon, however, as this uniformity is broken in upon, the valuable stocks of gas and oil came to light." In a later report[5] he refers to it as a terrace in the following words: "The structure referred to is associated with the arrest or suppression of the prevailing dip of the rocks for a given space and the establishment of a terrace or level bench in its place. . . ." Terrace structure is very prominent in the Cincinnati arch and is probably responsible for most of the accumulation of oil in the Trenton limestone in the Ohio and Indiana fields. With the able assistance of Orton it is now generally regarded that White proved the correctness of his anticlinal theory and thereafter he seems to have

regarded the problem of the accumulation of oil and gas as forever settled and that the last word on this subject had been said. Up to the close of the century there was therefore little or no addition made to our knowledge of the method of oil accumulation even though in that interval White published two volumes of the Geological Survey of West Virginia, which dealt principally with the question of oil and gas. . . .

More Recent Views.

The most recent development of ideas regarding the accumulation of oil and gas in the Appalachian region seems to have come largely, if not wholly, from geologists of the Federal Survey, who prior to this time had not been identified in any way with the investigation. . . . Although almost every worker in the oil and gas fields of south-west Pennsylvania had discovered that the anticlinal theory would not apply to dry rocks and that all of the lower sands are dry in that region Mr. L. H. Woolsey was the first to state it in an oil report, and this was merely incidental and without adequate discussion. He says:[6] "If the sand holds much water, oil should occur high on the flank (of the anticline); if little water, low on the flank; if none, near the bottom of the syncline." Mr. F. G. Clapp, working in the extreme south-western corner of Pennsylvania, had to deal even more directly with dry rocks, than did Woolsey in the Smiths Ferry district. In Greene County and the southern portion of Washington County, Clapp found that most of the productive sands, especially the deeper ones, are almost universally dry and that the pools of oil do not follow the rules laid down in the anticlinal theory. His conclusions are as follows:[7] "Considerable doubt has been thrown on the anticlinal theory by oil and gas operators, on account of various apparent exceptions to its application. By most geologists the theory is now accepted, not, however, as indicating absolutely the limitations of the occurrence of oil and gas, but as expressing the general relations of their occurrence to geologic structure, such relations being subject to many modifying conditions. Some of the most important modifying conditions are (1) the presence or absence of salt water in a given region or in a given sand; (2) the continuity and shape of the anticlines—whether they are rising or pitching; (3) the porosity of the oil rock—that is, its capacity to hold oil; and, where the rocks are saturated, (4) the height of the water level." Again he says: "Where the salt water is absent the oil occurs more irregularly and its position is more affected by other conditions; it may lie along the synclinal axes or at many points scattered over the slopes of the fold. In the study of dry rocks the oil is most irregularly distributed." At first they were puzzled to know how oil could be so widely distributed throughout dry rocks, but finally this was explained on the supposition that it might have accumulated during an early period of saturation and then have been disseminated. This is stated as follows:[8] " The structural position of the oil pools and the dryness of the rocks in Greene County suggest the hypothesis that the oil accumulated in pools after the formation of the rocks, while they were yet saturated with water, but that with the recession or disappearance of the water the oil moved by gravity back down the slope of the bed to its present position. Under these conditions the oil would be stopped in its downward progress by a reversed dip, by a dip of lower angle, or by increased density or thinning out of the reservoir rock." In the opinion of the writer no more important discovery has been made regarding the accumulation of oil than that noted above, namely, the recognition of (1) that the conditions of accumulation are entirely different in saturated and unsaturated rocks; (2) that in saturated rocks the water level may be different in different basins in the same sand; (3) that the water level may not have been constant in past geologic time and that rocks which to-day are dry, previously may have been saturated; and (4) that under certain conditions the oil has moved up the slope, whereas under other conditions it has moved down the dip of the porous beds.

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MINING MEN AND MATTERS.

Mr. R. R. Hollins has returned to the Rand.

* * * *

Mr. Louis Oppenheimer, of 1, St. Andrew Street, Holborn Circus, E.C., has been elected to the vacant seat on the Board of Directors of the Consolidated Mines Selection Company.

* * * *

" Captain " Phillips, one of the best-known mine managers of the old school on the Reef, died on Christmas Eve at Randfontein, at the age of 74. He had extensive mining experience in Cornwall, Newfoundland, Colorado (U.S.A.), and the Transvaal.

* * * *

Mr. Paul Selby, who, during the last ten years, has been manager of the Robinson, New Modderfontein, Ferreira, French Rand, Robinson, and Geldenhuis Deep Mines respectively, left by the Imperial mail on a visit to Europe and America. He will probably be absent nine months. Meanwhile, Mr. E. Pam has been appointed manager of the Geldenhuis Deep.

* * * *

Mr. Stuart Hogg, who for 18 years has been secretary of the Van Ryn Gold Mines, is to be given a seat on the Board, the directors having decided to appoint him, as from the end of next month, to fill the vacancy caused by the death of Mr. John Sear. At the meeting of the company the chairman stated that Mr. Hogg had carried out his secretarial duties to the complete satisfaction of the Board and of the large body of shareholders. The secretaryship is being taken over by the General Mining and Finance Corporation, under whose ægis the company has achieved so great a success.

De Beers and Voorspoed.

A special general meeting of the Voorspoed Diamond Mining Company will be held at Johannesburg on February 7 next to consider a resolution confirming the provisional agreement made between the company and the De Beers Consolidated Mines for the purchase by the latter of the former's property for the price of £393,571 5s. In a circular to the shareholders, the directors explain the reasons which led up to the proposal to part with the assets of the company. They state that in addition to the sum required for the alteration of plant, estimated at about £80,000 to £100,000, provision had to be made for further large sums for the purpose of sinking shafts and generally preparing the mine for underground working. In these circumstances they consulted with the largest shareholders as to the possibility of raising further funds, but these negotiations did not lead to any result. At this period in July last an offer was received from the De Beers Company, who were large bondholders and shareholders, to purchase the property and assets, and lengthy negotiations have been proceeding since that date, finally resulting in an agreement. Instead of the original proposal to allot debentures to the shareholders, payment of 12s. 6d. per share is to be made in cash.

RHODESIA: SOME GLOOMY VIEWS.

Severity of the Drought—No Money in the Country—Pessimism as to Mines and Farms.

A GENTLEMEN who has just returned from Bulawayo after a two years' residence in Southern Rhodesia speaks very gloomily of the position in that country. Our informant is a well-known Transvaaler, who has been a pioneer of more than one mining field, and his opinions are entitled to respect, and bear all the impress of authority and reliability. "Bulawayo," he remarked in response to an enquiry, "is at present like a town of the dead. At any hour of the day I would defy you to find half-a-dozen people in the main street between the Grand Hotel and the Mashonaland Agency Buildings on any ordinary day of the week. On mail days there are a few people to be observed around the Post Office, but under ordinary circumstances Bulawayo appears almost to be uninhabited. There is absolutely no money in the place. You talk of people being "broke" in Johannesburg, but people here are not really "hard up" in the sense that they are in Rhodesia, where the majority of persons do not seem to possess a sixpence." Having in mind the comparative affluence of Rhodesia a couple of years ago, we asked the reason.

EFFECT OF THE DROUGHT.

"Well," replied Mr. ——, "the recent drought has hit everyone very badly. Of course, previous to experiencing this misfortune things were in a pretty bad way. The country had been overboomed and the reaction was bound to set in. Then came this abnormally dry period. The 1910-11 rainy season was a very bad one and as for the 1911-12 season, why, practically no rain at all had fallen in Bulawayo up to the time of my departure a week or two ago. The farmers have no crops, large numbers of mines have had to close down all over the country, and the severity of the drought has compelled prospectors to abandon their expeditions and come into the towns, there to swell the ranks of the unemployed. Water in Bulawayo is as valuable as soda water, a bath is an almost priceless luxury, and the heat of late has simply been terrific."

SALISBURY AND GATOOMA.

"How about other towns?" we asked. "In Salisbury the position is if anything worse than in Bulawayo. At Gatooma things are somewhat more cheerful, but there, too, ready money is exceedingly scarce. The whole country is existing on credit, and how on earth the majority of people manage to make a living passes my comprehension."

NO NEW DISCOVERIES.

"Have any new discoveries of importance been made in Matabeleland?" we enquired. "None that I know of. As I said just now, very little prospecting work is going on, and even if one gets hold of a decent property it is very hard indeed to get it placed. Since the Rand mining houses retired from the country and the Rhodesia Exploration and Development Company was absorbed by the Consolidated Gold Fields there are only two real mining houses in Rhodesia, and they seem to operate hand in hand in regard to the taking up of mining claims. I mean that if one will not do business with you the other will not either." "Personally," continued Mr. ——, "I am very pessimistic as to the future of the country; the immediate future, at any rate. It is very much overrated as a mining territory, and what with the drought, stock diseases, and the hampering attitude of the Government towards settlers, I am quite sure I would not go farming there. It seems to me indeed that Rhodesia does not want any more settlers. My own experience is that Rhodesians are far from being well disposed to men from the Rand. They appear to regard Randites as fools and fair prey for all and sundry."

OTHER OPINIONS.

Mr. ——'s views appear to us exceptionally gloomy, and his strictures on Rhodesians generally are, to say the least of it, uncharitable. His views are, however, confirmed by others who have returned from Rhodesia. One business man, who has returned from the country after a fruitless commercial mission, was most emphatic in his condemnation of Rhodesia, and said that the prospects of doing business up there at present are non-existent. Another mining man who in the past two years has travelled practically over the whole country, expressed himself as disgusted with the place and the methods of mining and business pursued there. He ventured the opinion that there were more hopelessly incompetent men holding big positions in Rhodesia than in any other part of the world. No doubt these views are largely coloured by personal disappointment and bitterness, but it seems abundantly clear that the number of people who subscribe to the very optimistic views regarding Rhodesia circulated a year or two ago is now very small, if, indeed, there are any optimists remaining.

Kaalfontein Diamonds.

The ordinary general meeting of shareholders of Kaalfontein Diamonds, Ltd., was held this week, in the company's office, Exploration Buildings, Colonel J. Donaldson presided. The chairman, in moving the adoption of the report and accounts, said: Accounts are now presented to you for the year ended June 30, 1912. The capital remains unchanged at £29,000. During the year your farm has been bonded to the extent of £750 in order to raise funds for the purchase of 3,486 Madagascar Oil Development shares. With this exception your assets remain unchanged from last year. Your available cash balance on June 30 was £340 11s. 4d. Your income for the year amounted to £54 1s. 8d., and your expenditure to £235 14s., for interest, secretarial remuneration and other charges; the result being a loss of £181 12s. 4d. The retiring directors, Messrs. E. J. Sievwright and M. F. Head, were re-elected, and Mr. J. H. Vining was re-appointed auditor.

Spitzkop Farm Gold.

The report of the Spitzkop Farm Gold Company, Ltd., for the year ended 30th June, to be presented to the meeting on the 19th instant, states that the revenue account for the year shows a debit balance of £243, as compared with £384 in the previous year. The revenue from the new tribute only accrued during the last four months of the financial year. As mentioned at the last general meeting, the negotiations which had been referred to in the directors' report then submitted in regard to an application to tribute a portion of the company's farm had been brought to a successful conclusion. A contract was entered into for a tributing lease of about 300 acres for a period of five years, during which time a minimum quantity of 1,000 tons of ore has to be treated monthly and a royalty of 15 per cent. on the gross value of the bullion recovered paid to the company. Milling was started about the middle of March, and the royalty to 30th June amounted to £436. Other portions of the farm will be let on tribute as opportunity offers.

The J. H. Rider Fund.

Amounts received to date:—

"Engineer"	£0	10	6
A Member of the Profession ...	0	10	6
Dr. A. Heymann	1	1	0

Rhodesian Section.

LATEST MINING NEWS.

The November Output—Cam and Motor Report—Three Months' Work at the Eldorado—Kimberley Mashonaland—The Eileen Alannah—The Giant—Shamva Mines—A Mining Reservation—The Rezende—Lonely Reef Developments.

THE total value of Southern Rhodesia's mineral output for November has been officially declared at £239,182, as compared with £244,967 in October. The complete figures for the two months read as under:—October: Gold, £230,072; silver, £1,717; lead, £817; chrome iron, £5,750; coal (sales), £6,611; total, £244,967. November: Gold, £225,957; silver, £1,507; lead, £625; chrome iron, £4,940; coal (sales), £6,153; total, £239,182. As will be seen from the foregoing, there was a shrinkage in each separate item of production, the most marked being a difference of £4,115 in the gold return. But the reduction fairly corresponds to the shorter month's run—a 30-day month as against a 31-day month—and on the whole, and especially when having in mind the abnormal conditions ruling in many parts of the country by reason of the drought, the result may be said to be quite satisfactory. As is now generally realised, no great change can be expected to take place in output until some of the larger properties now in course of development are ready to enter the ranks of the active contributors. But in the meantime it is pleasant to be able to say that the result of the continued development operations on the more important of these properties, such for example as the Cam and Motor, the Planet-Arcturus, the Shamva, the Falcon, and the Golden Kopje, is well up to expectations. On the first-named particularly, as well as on the Falcon, the results have recently been especially gratifying, and upon both of these and upon the Shamva also we may hope to see their various reduction plants, if not completely ready, at least very nearly so, before another twelve months have gone by.

* * * *

The appended table shows the value of the monthly and annual gold outputs since January, 1910, together with the other minerals recovered:—

Month.	1910.	1911.	1912.
January	£227,508	£207,904	£214,918
February	203,888	203,055	209,743
March	228,385	231,947	215,102
April	228,213	221,296	221,476
May	224,888	211,413	234,407
June	214,709	215,346	226,867
July	195,233	237,517	240,514
August	191,423	243,712	239,077
September	178,950	225,777	230,573
October	234,229	218,862	230,072
November	240,573	214,040	225,957
December	199,500	217,026	
Total Gold ...	£2,568,198	£2,647,895	£2,488,706
Other minerals	222,930	242,864	215,148
Total Value ...	£2,791,128	£2,890,759	£2,703,854

* * * *

The report of the Cam and Motor Gold Mining Co., Ltd., for the year ended June 30 last states that development has been pushed steadily ahead during the year. The tonnage had been increased at June 30 last to 904,408, of a gross value of 45s. 2.89d. per ton, while a cable has since been received stating that at the end of September last the reserves had been increased to 930,766 tons, and this figure has since been increased. The present development programme will be continued until the end of December, when the engineers have instructions to proceed to prepare the mine for stoping, so that the mine will be in a proper condition and ready to produce 15,000 tons per month. No work has been done on the Cam, Good Shepherd, and Petrol properties during the year, but the Directors are now considering the question of doing a certain amount of work on the Cam and Good Shepherd claims in order to add to the ore reserves already opened up in these properties.

* * * *

The report of the Eldorado Banket Company for the three months ended September 30, states that the profits amounted to £30,956. An interim dividend has been paid in respect of the financial year ending March 31, of 3s. per share, and the estimated balance of net profit (including the estimated profit on accumulated tailings), after deduction of the interim dividend, and subject to the customary depreciation allowances, amounted at September 30 approximately to £41,270. The following is a schedule of the lengths and values of pay rock on the different levels:—

Level.	Length of Pay Rock.	Value of Pay Rock as exposed in Drive.	Width exposed.
1	930 feet.	12.02 dwts.	5 ft. 3 ins.
2	1,055 ,,	18.68 ,,	5 ,, 5 ,,
3	955 ,,	14.50 ,,	5 ,, 10 ,,
4	912 ,,	18.21 ,,	6 ,, 0 ,,
5	1,073 ,,	1 oz. 3.12 ,,	6 ,, 0 ,,
6	940 ,,	14.89 ,,	6 ,, 0 ,,
7	790 ,,	15.93 ,,	6 ,, 0 ,,
8	330 ,,	1 oz. 2.50 ,,	6 ,, 0 ,,
9	280 ,,	12.5 ,, *	6 ,, 0 ,,

*Reduced values.

* * * *

The directors' report for the year ended May 31, 1912, shows that the Kimberley (Mashonaland) G.M. Co., not having yet commenced ore treatment operations, a profit and loss account is not submitted. The amount of ore already fully developed is approximately 170,000 tons of an average assay value of 9 dwts. With a view to placing the mine on a profit-earning basis as soon as possible, the directors have authorised the purchase of a 3,000 ton plant, consisting of six Nissen stamps, two tube mills, and a sand and slimes plant, which is expected to be complete and running by the middle of next year. The above-mentioned ore reserves, which do not include the tonnage above the first level, estimated at some 25,000 tons, are sufficient to keep the reduction plant employed for upwards of four years, irrespective of any other reserves which may be opened up by future development. It is, therefore, unnecessary to carry out any further development pending the commencement of crushing. The extension of the line to Shamva will pass close to the Kimberley Reefs Mine, and is expected to be completed in the early part of 1913.

* * * *

The Eileen Alannah Mining Company, Limited, has issued the following circular to shareholders:—"I am desired to inform you that the board have taken advantage of the arrival in London from Rhodesia of Mr. A. H. Ackermann, the resident mining engineer to the British South Africa Company, to fully discuss with him the present position of the Eileen Alannah Mine, and the working policy now to be adopted, pending the installation of the reduction plant. At the date of the flotation of the company, in

November, 1911, Mr. Ackermann reported that the ore reserves, including 15,000 tons partially developed, then amounted to 174,824 tons. Since that date some 6,000 feet of additional development has been accomplished, and the main incline shaft has been sunk to the 8th level, a total depth of 948 feet. The latest report from the mine, dated October 18, shows the fully-developed ore reserves then amounted to 216,438 tons of an average value of 56s. 5d. per ton; and Mr. Ackermann estimates that, in addition to these, there are some 85,000 tons of partially-developed ore of somewhat lower grade, making an estimated tonnage of rather more than 300,000 tons, representing a six years supply of ore for the mill it is now proposed to immediately to erect. The Eglantine claims, upon which this company has an option, are also opening up in a promising manner. In view of these satisfactory figures the continuance of development for the present is considered unnecessary; consequently, on the advice of Mr. Ackermann, from December 31 next, all work will be concentrated on the erection of the new plant, and as soon as milling operations commence, development work will be resumed concurrently at much reduced costs. The board recently engaged the services of an experienced metallurgist and a mechanical engineer. These gentlemen arrived at the mine in October, and are now preparing the specifications of the proposed plant, and it is expected that crushing will commence in the latter part of next year. The works will be arranged to provide for greatly augmenting the capacity of the mill at any future time, as soon as considered advisable. It is satisfactory to note that the Eileen Alannah ore is considered to be readily amenable to treatment. The working capital funds in hand at the disposal of the company are estimated to be sufficient to defray the total costs of the plant, its erection, and all accessories up to the producing stage, but not to pay for additional development during the period of construction. The mine having now reached an advanced stage of development, with ore reserves already six years ahead of the mill, the temporary suspension of development, solely on the grounds of economy, will avoid any necessity for a considerable increase of the issued capital of the company, which, obviously, would not be to the advantage of the present shareholders.—By order of the board, E. Poynder, secretary." It is said that the ore reserves have been estimated on a very conservative basis.

* * * *

The following is a copy of a cable recently received by the Board of the Giant Mines of Rhodesia, from the property:—" No. 2 level main south drive, drive extended 5ft. a total of 638ft., reef 55in. wide, assaying 1 dwt. per ton. Commenced to cross-cut at 618ft. south-west cross-cut off south drive, driven cross-cut 5ft. only traces. East Cross-cut off south drive driven cross-cut 5ft., assay values 12 dwts."

* * * *

The following particulars are extracted from the report of the Shamva Mines, Limited, for the quarter ended September 30:—Driven, risen and sunk (excluding footage on main adit fourth level), 546ft.; ore developed as at July 1, 2,141,992 tons; ore developed during period of report, 61,920 tons. Working Expenditure: Development account, £2,273; general expenses at mine and Bulawayo, £1,564; main adit account, £487; ore at grass account, £1,868. Capital expenditure, £14,345.

* * * *

The Mining Commissioner at Bulawayo (Mr. Niel Macglashan) notifies for public information that, with a view to prospecting for water for the town, all open ground inside the area on Bulawayo Commonage is reserved in terms of Section 12 (2) (d) of the Mines and Minerals Ordinance against the prospecting and pegging of mining locations, and in terms of Section 5 of the Precious Stones Mining and Trade Ordinance of 1906, against the prospecting thereon for diamonds or precious stones by holders of registered permits.

* * * *

The following cable was recently despatched from the mine to the London office of the Rezende Mines, Ltd.:—" Have had two unimportant storms with practically no benefit. November returns will be affected. Drought position very serious. Present indications favourable, but must have heavy rain for several days before position substantially relieved." Office note.—" This cablegram refers to the note appended to the October return, which stated that the long-continued drought was causing the management considerable anxiety."

* * * *

The following are additional extracts from the report of the Lonely Reef G.M. Co., for the quarter ended 30th September:—" In No. 9 level 100ft. of driving was done. The north end of the shoot seems to have re-assumed the low grade of pitch which it has in the top three levels, as it was only reached in the drive at 80ft. south of the shaft cross-cut. The short length of vein exposed is extremely good, three samples at intervals of 5ft. gave 5 ozs. 8.6 dwts. over a width of 28ins. Since the quarter closed further driving has been done, disclosing equally good results. The ore at this deepest point in the mine is still oxidised, and to all appearance the same as that in the upper levels. . . The working cost for the quarter, including all administration expenses in London and Bulawayo, but not including royalty, is just under £1 10s. per ton. Including royalty is just under £1 14s. As substantial reduction on these figures should be made within the next four months. The figures are not comparable with those of any previous quarter, as there has been no accumulated slime worked. The capital expenditure amounted to £5,046 17s. 6d." The supply of native labour has been ample for all requirements, but the consulting engineer anticipates a shortage in the immediate future. " Owing to the fact of having over three months' supply of broken ore in the mine, I am hopeful that the shortage, which is usual at this time of the year, and for the next four months, will not detrimentally affect our working."—(London office note.—Arrangements have now been made for increasing the capacity of the crushing plant by the erection of five new stamps of 1,250 lbs. each, the present power being amply sufficient to run this new battery. The consulting engineer estimates that this addition will ensure a monthly output of 5,000 tons.)

Interesting Discovery.

Mr. D. E. McCausland writes as follows to the *Rhodesia Herald*:—Mr. E. C. Windley, of Salisbury, recently showed me a coin which had come into his possession, having been found by a prospector in an ancient working at Gwanda. As it seemed possible that the find might be of some historical value I obtained his permission to forward the coin for identification to the Department of Coins and Medals, British Museum, and the annexed reply may interest some of your readers. The letter referred to is signed " J. Allan (for the Keeper of Coins) " and is as follows:—The coin you enclose is of the Roman Emperor, Diocletian, struck at Alexandria, In Egypt. Diocletian reigned from 305 to 313 A.D., but this piece is dated in the fifth year of his reign—309-10 A.D. These coins are not rare and it might be risky to make any deductions as to the date of the workings from a single specimen being found.

Specimen copies of the *S.A. Mining Journal* can be had from our new offices at 125, Salisbury House, London Wall, E.C.

RHODESIA'S MINERAL OUTPUT FOR NOVEMBER.

Details for the Month—A Slight Decrease.

THE following is the official return, as supplied by the Rhodesia Chamber of Mines (Incorporated) of the mineral output for the month of November, 1912:—

MATABELELAND.

Bulawayo District.

	Tons treated.	Yield. ozs.	Value. £
Agincourt (Est. S. Roodt, deceased)	382	315·44	1,325
Alice (Est. R. Barkley, deceased)	754	84·61	356
do. (tailings)	1,152	101·72	427
Bangali (Hicks and Arbery)	82	62·24	261
Belmont, E. (A. D. Hall)	30	12·36	52
Big Ben (W. E. Hunt)	148	125·48	522
do. (tailings)	330	231·45	973
Bilhah (V. Friberg)	138	43·64	188
Bobs (Bobs Reef Syndicate)	180	13·72	55
Bucks Reef G.M., Ltd.	876	351·26	1,472
do. (tailings)	566	52·98	220
Burton (W. Holmes)	470	88·10	376
Bushtick Mines, Ltd.	5,402	199·16	830
do. (tailings)	2,612	433·28	1,824
do. (slimes)	3,012	358·08	1,508
"C" (D. and C. Syndicate)	1,747	116·05	482
do. (tailings)	1,421	114·76	486
do. (slimes)	326	80·08	333
Cambrian (J. Fritz)	—	3·15	19
Claremont Mines (Rhodesia), Ltd.	2,375	454·51	1,909
Clean Up (New Clifton G.M. and D. Co., Ltd.)	348	76·12	392
Cottage (Black and McKenna)	120	21·47	90
Cross (T. W. Angus)	60	14·96	63
Eagle, A. (Macdonald and Co.)	559	259·49	1,090
do. (tailings)	288	33·07	139
East Gwanda Mines, Ltd., Geelong—(Est. W. Hogg, deceased)	1,450	231·17	971
Other sources	—	85·49	359
Elba (pannings) (Mrs. Anderson)	—	1·77	7
Glen, A. (A. Fraser)	170	48·75	205
Imbusine (Cumings and Berry)	475	104·94	441
Jumpers (A. H. Newton)	230	53·39	224
Kalydor (Rose & Kalydor Mine) (Oct. & Nov.)	398	124·30	522
Koba (Koba Syndicate)	280	83·03	349
Li Hang Chang (Estate Comrie, decd., and Brice) (tailings)	260	20·03	84
Limes (D. Vincent)	185	64·33	270
Lonely Reef G.M. Co., Ltd.	3,590	1,121·63	4,711
do. (slimes)	3,590	2,439·46	10,246
Matabele 3 (R. M. Nairn)	1,175	430·27	1,807
do. (tailings)	765	61·94	260
Matabele Queen's Co., Ltd.	1,550	378·45	1,590
do. (tailings)	1,550	454·81	1,910
do. (slimes)	767	115·05	483
Minnie's Luck A. (Mrs. C. M. Reid)	543	67·69	284
Mystery A.1.N. (W. Souter)	264	80·77	339
N'daba (M. Westerberg)	11	6·33	27
Nelly (F. D. Roscoe)	189	69·81	293
do. (tailings)	250	35·94	151
New Eclipse (J. R. Stewart)	800	342·58	1,439
do. (tailings)	230	35·87	151
New Hope (E. Gardner), clean up	8	·99	4
Nita (J. Gardner)	142	20·28	85
Northern Star No. 2 (Peel's Rhod. Syn., Ltd.)	400	172·35	724
do. (tailings)	460	19·80	83
Old Nic (Chart. and Gen. E. and F. Co., Ltd.)	1,665	607·57	2,552
do. (tailings)	1,210	95·70	402
Peach, A. (C. Salomon) (tailings)	110	19·46	82
Penzance (R. Urquhart)	70	13·93	58
do. (tailings)	60	11·43	48
Red Rose (C. G. Bancroft)	120	23·17	97
do. (concentrates)	15	6·60	28
Redrup Kop 1E (Forbes' Rhodesia Syndicate, Ltd.), tailings and slimes	1,400	175·11	735
Riverbank (R. Martindale)	100	53·56	225
Riversdale (Bruhns and Schwarz)	255	69·28	291
Saint Patrick (J. Falk)	80	8·77	37
September (T. Wilson), October	60	4·63	19
Spitzkop (Mrs. H. Smallie), Oct. and Nov.	500	49·34	207
do. (tailings)	350	32·29	136
Suffolk (J. A. Warwick)	357	56·44	237
Susanna Mines, Ltd.	928	498·55	2,094
do. (tailings)	489	43·65	183
Tuff Nut (King's Syndicate)	260	199·81	839
do. (tailings)	200	30·30	127
Bulawayo district total	—	12,317·99	£51,806

Gwelo District.

Ardpatrick (C. Malcham)	305	157·60	662
Arizona No. 2 (A. J. Marchant)	140	66·69	280
do. (tailings)	250	21·49	90
Arizona No. 2 S. and Conqueror (L. R. Evans)	100	92·99	391
do. (tailings)	200	29·14	122
Beacon Hill 1 (R. Aserman)	359	196·54	825
Ben, October pannings (J. T. Hodgson)	—	·94	4
Bute (T. Pedlow), October	50	16·71	70
Cinderella (P. Burt), dry crushing and cyaniding	250	43·78	184
Csardas (Wolfshall Syndicate)	561	432·05	1,815
do. (tailings and slimes)	554	94·31	396
Delegates (O. Hardy)	8	1·78	7
Empire Day (S. Black) (tailings)	95	9·11	38
Gaika G.M. Co., Ltd.	3,030	1,031·86	4,334
do. (tailings)	1,445	110·71	465
do. (slimes)	1,651	119·27	501
Glen Rosa No. 1 (McIntosh and Lister), Oct. and Nov.)	272	167·32	703
do. (tailings)	223	32·83	139
Globe and Phoenix G.M. Co., Ltd.	6,386	8,455·21	35,512
do. (concentrates)	235	732·88	3,078
Gretna Green (M. L. Price)	110	86·88	365
Invulnerable (A. E. West)	160	43·20	181
Moss (James and Morrisby)	163	103·02	433
Nevada (C. C. Hendrie)	99	19·05	80
New Dunraven G.M., Ltd.	850	151·14	635
do. (tailings)	550	16·07	67
N'Kanya (Tranmier G. Syndicate, Ltd.), October and November	282	57·22	240
North Bonsor (Cornish Syndicate)	1,327	261·29	1,097
do. (tailings)	735	86·20	362
Other Sources (Nicholls Bros.)	—	55·86	235
Pompei (Pharos Syndicate)	62	31·51	132
Pretty Polly (New Rhod. R. Co., Ltd.)	558	100·92	424
do. (tailings)	350	41·79	175
Red Hill Dev. Synd., Ltd. (Redhill)	1,260	110·28	463
do. (tailings)	560	149·49	628
Selukwe Columbia G.M., Ltd.	3,175	897·26	3,769
do. (tailings)	2,246	385·53	1,639
do. (slimes)	930	135·14	548
Sheba Bongola (Forbes' Rhodesia Syndicate) (clean-up tailings)	—	50·53	212
South Bonsor (Ideal Syndicate)	320	117·99	496
Sunrise (L. Makin) (October)	40	11·63	49
Veracity (J. Fischer) (slimes)	650	57·61	242
Wanderer (Selukwe) G.M., Ltd.	18,800	1,888·38	7,931
War Wolf (War Wolf Syndicate)	180	36·23	152
Willow (W. C. Spargo)	146	20·26	85
Winston (J. Jones) (October and November)	11	63·88	268
Gwelo district total	—	16,791·57	£70,524
Matabeleland total		29,109·56 ozs.	
Value		£122,330	

MASHONALAND.

Hartley District.

	Tons treated.	Yield. ozs.	Value. £
Acorn Gold Mines, Ltd.	420	211·79	890
do. (tailings)	300	76·07	319
Amaroso (C. H. Wheildon) (tailings)	220	43·87	184
Battlefields (Rhodesia), Ltd. (Minaar and McArthur)	1,483	450·60	1,893
do. (tailings and slimes)	1,483	215·70	906
Blue Rock (Ellsmoor and Goodyer)	140	77·37	325
do. (tailings)	117	55·55	233
Brilliant (Mabel's Luck Syndicate)	600	480·15	2,017
do. (tailings)	300	125·31	526
Concession and W. Extension (C. E. Simpson)	1,666	374·02	1,571
do. (tailings)	1,308	157·17	660
Crown No. 2 (Crown Syndicate)	110	17·13	72
do. (tailings)	100	26·09	110
Ebenezer (Spring, Spring and Pexton)	8	13·69	57
Eiffel Blue and E. Ext. (Willoughby's Con. Co., Ltd.)	1,377	775·95	3,259
do. (tailings)	890	72·61	305
Giant Mines of Rhodesia, Ltd.	10,269	3,635·00	15,418
Glencairn No. 3 (Glenrosa Syndicate)	425	235·48	989
do (tailings)	373	26·53	111
Golden Valley (J. Mack)	501	142·65	599
do. (tailings)	261	45·00	189
Goldmore (H. B. Gibbons)	90	28·09	118
do. (tailings)	70	30·52	128
Great Scott (J. W. Colliver)	62	18·82	79
Great Tontine (Yellow Jacket Syndicate)	260	96·18	404
Guelph, pannings (J. Davidson)	—	1·04	4
I.X.L. (Heroine G.M. Co., Ltd.)	135	36·07	151
Juno (H. R. Nicholl)	150	41·31	173
Kanyemba (Kanyemba Syndicate)	250	365·65	1,536
do. (tailings)	150	79·06	332

	Tons treated.	Yield. ozs.	Value. £
Kyrenia (J. Mack)	650	103·12	433
do. (tailings)	416	15·76	66
Luke (Luke Syndicate)	55	59·52	250
Mali (McAdams and Harrill)	108	66·66	280
Mammoth (J. Colliver)	60	9·20	39
Monte Carlo I. (G. H. Coke), Sept. & Oct.	45	6·15	26
Nabob, B., and Arrow (J. C. Spiro)	90	9·34	39
Oleander G.M. Co., Ltd.	362	135·88	571
do. (tailings and slimes)	362	58·91	247
Owl (A. Rolfe)	1,263	458·23	1,925
do. (tailings)	900	178·80	751
Peacock (Wellington Mines, Ltd)	452	131·18	551
do. (tailings)	162	53·13	223
Pickstone Gold Mines, Ltd.	300	484·38	2,034
do. (tailings)	225	132·17	555
Pioneer (Hartley Pioneer Syndicate)	300	52·46	220
Progressive E. (R. R. Aitkin)	80	38·26	161
Rome (Monarch, Tati) G.M. Syndicate, Ltd.	472	52·40	220
Rosherville (J. Tilbury)	40	14·43	61
Rouge (Oswald and Shine)	505	118·06	496
Seigneury (N. A. Arnold)	407	107·97	453
Shepherds (Phœnician (Rhodesia) Co., Ltd.)	575	384·57	1,615
do. (tailings)	520	277·27	1,165
Sid (Sebakwe and District Mines, Ltd)	645	325·82	1,368
Stand-by (F. Curtois)	56	9·80	41
Tea (Central Mining and Invest. Co., Ltd.)	880	229·23	963
do. (tailings)	350	9·19	39
Thistle Etna G.M., Ltd.	2,200	807·47	3,391
do. (tailings)	1,855	88·69	373
do. (slimes)	542	30·99	130
Three Cheers No. 1 (F. J. Nalty) (tailings), October and November	1,200	86·19	362
Togo (Philip Wiggins, Ltd.) (Oct. and Nov.)	1,106	92·04	387
do. (tailings)	575	80·89	378
Whistlecock 1 W. (T. McDowell), October	80	8·80	37
do. (tailings)	100	16·84	71
White Rose (J. Mack)	261	123·91	520
Washington (I. J. Minaar)	380	104·02	437
do. (tailings)	340	42·40	178
Hartley district total	—	12,967·60	54.614

Lomagundi District.

	Tons treated.	Yield. ozs.	Value. £
Alluvial (J. Gough)	—	17·66	74
Alluvial (R. G. Harding)	—	16·93	71
Alluvial (E. A. Warry)	—	11·40	48
Ayrshire (Goldfields R. D. Co., Ltd.) (clean-up)	—	69·49	292
Eldorado Banket G.M. Co., Ltd.	7,413	3,606·90	15.297
do. (tailings)	7,489	802·47	3,403
Linnett (A. L. R. Morkel)	301	85·78	360
Lone Hill (Moll and Platt)	106	29·95	126
St. Ives (Oswald and Shine)	476	58·59	246
Lomagundi district total	—	4,699·17	£19.917

Mazoe District.

	Tons treated.	Yield. ozs.	Value. £
Authentic (F. Adamson) (tailings)	310	21·14	89
Commonwealth G.M. Co., Ltd.	280	45·57	194
do. (tailings)	180	26·21	111
do. (slimes)	100	9·60	41
Dunstable (J. Strachan)	300	86·62	364
Goth (Goth Syndicate)	53	16·11	68
Hay G.M. Co., Ltd.	366	138·64	587
do. (tailings)	366	125·02	530
Honest (G. Brown)	60	43·40	182
Jumbo G.M. Co, Ltd.	3,100	667·07	2,835
do. (tailings)	2.000	383·61	1,630
do. (slimes)	1,100	140·86	599
Marconi, A. (R. Ricardo), October and Nov.)	606	49·53	208
Micky (B. G. Byerley)	220	305·97	1,285
Mitre 8 (Bishop's Syndicate)	8	10·83	45
Pierrot (J. H. Hall)	80	12·41	52
Thornhill (Oceola G.M. Co., Ltd.)	665	179·57	754
do. (tailings)	458	22·99	97
Umkulu (Llahsram Syndicate)	181	86·27	362
Warwick (A. G. Whyte) (Oct. and Nov.)	337	121·80	512
Mazoe district total	—	2,493·22	10,545

Salisbury District.

	Tons treated.	Yield. ozs.	Value. £
Inyague (P. L. Peters), October	126	96·59	406
Juno, N. (L. Chiappini) (tailings)	1,000	142·71	599
Louise Grand (H. S. Plant), Oct. and Nov.	1,133	79·07	332
do. (tailings)	550	99·92	420
do. (slimes)	105	9·20	38
Mashona (B. G. Byerley)	30	103·46	435
Mont d'Or (Claxton and Bussell)	102	72·08	303
Old Loyalty (Shamva Ilex G.M. Co., Ltd.)	125	75·02	315
do. (tailings)	85	23·31	98
Other Sources	—	1·95	7
Perseverance (Crampton and Byerley)	360	72·62	305
Salisbury district total	—	775·93	£3,258

Victoria District.

Cambrian (C. Brunton) (clean-up)	—	10·12	42

Umtali District.

Contact (D. Tulloch), October	27	5·98	25
Kent (Sussex Syndicate), Oct. and Nov.	570	163·21	685
do. (tailings)	980	105·36	443
King's Daughter (Umtali W. Synd.), Oct. slags	—	38·16	160
King's Daughter, D.B. (Umtali W. Synd.), October and November	1,888	412·01	1.731
do. (tailings)	944	72·47	304
do. (slimes)	500	20·11	84
Palmyra (J. de G. Birch)	21	17·42	73
Redwing (S. D. Stewart)	198	44·01	185
Rezende Mines, Ltd. (Rezende and Penhalonga sections)	8,050	1,381·77	5,863
do. (concentrates)	154	513·33	2,147
do. (tailings)	2,947	390·29	1,656
Rezende, D.B. 2 (Imbeza Syndicate No. 2)	3,576	416·59	1,768
do. (concentrates)	5	30·66	127
Umtali district total	—	3.611·37	£15,251

Mashonaland total	24.557·41 ozs.
Value	£103.627
Grand total gold output	53.666·97 ozs.
Value	£225.957

SUMMARY.

Gold.	Ozs	Value.
Matabeleland	29,109·56	£122,330
Mashonaland	24,557·41	105,627
Total	53,665·97	£225,957
Silver, ozs.	13.154·49	£1,507
Lead, ozs.	39·65	625
Chrome iron, tons	2.213·14	4,940
Coal, tons (sales)	19,441·00	6,153
Total value November output	—	£239,182

Selukwe Columbia.

The report of the Selukwe Columbia Gold Mine, Ltd., for the year ended 30th June last, to be presented to the meeting on the 18th instant, states that recent developments have made it advisable to add to the mining area by the acquisition of some further reef-bearing claims, and negotiations were entered into and have been brought to a satisfactory conclusion by the acquirement of options to purchase certain claim areas known as the Wonderland (42 claims), Chimborazo Blocks (21 claims), and Danga Area (15 claims), all in the Gwelo district and in close proximity to the Selukwe boundaries. Acting on the advice of the consulting engineers, these options have since been exercised in the case of the Wonderland and Chimborazo Blocks, on which exploratory work to date has revealed reef of good value. In accordance with the option agreement a short shaft has been sunk on the Danga area, and at 72 feet depth a level is being driven east and west. The acquisition of these properties, payment for which will be made partly in cash and partly in shares, will necessitate the issue of further capital. It is proposed to ask the shareholders for power to increase the capital to the extent of a further £25.000. Of the 100,000 shares proposed to be created, 35,000 will be allotted to the vendors of the Wonderland and Chimborazo claims, in addition to £10,225 cash, whilst it is necessary to be in a position to allot a further 20,000 shares which, together with £5,000 cash, will be the price of the Danga claims should that option be exercised. The balance of 45,000 shares will be held in reserve for future requirements. The result of the year's work shows a profit of £6,410. Provision for depreciation of machinery, plant, buildings, etc., absorbed a sum of £5,013, leaving a balance of £1,397, which, added to the credit balance brought forward—namely, £3,561—gives an available balance of £4,959, which it is proposed to carry forward. The developments during the past year have not been encouraging; the ore reserves have been decreased by 4,200 tons and the assay value has been reduced from 13 dwts. to 11·7 dwts. These conditions have arisen through the severe drought, which necessitated the mill closing down from want of water, and further through the existence of faults which have caused serious displacements to the reef in the lower levels, thus increasing the cost of mining. The scarcity of native labour during the year was also an adverse factor.

Correspondence and Discussion.

Comments on Questions Arising in Technical Practice or Suggested by Articles in the Journal —Views, Suggestions and Experiences of Readers.

S.A. Oil Ventures.

To the Editor, *South African Mining Journal.*

Sir,—As your journal has a wide circulation in Great Britain and the Continent, I should be glad if you would give me the opportunity of explaining my position with regard to an undertaking in connection with which my name has been mentioned in a widely-circulated prospectus. The name of the venture I refer to is the Consolidated Oil Fields of South Africa, Limited. Two or three months ago a Mr. Macalister, of London, arrived in this country with the object, it was stated in the papers, of investigating the oil prospects of South Africa. Shortly afterwards I received a letter from him asking me if I would give him any assistance in the matter, and also if I would bring up to date an old report on the Mossel Bay district which I wrote nearly fifteen years ago. I expressed myself ready to do what I could for him, but said that as I had been out of touch with what had been done in the district in question for some years, I was unable to add anything to my report. Being under the impression that he was looking out for oil in the country generally, I advised him to visit every district upon which work had been done and collect all the information possible before entering upon a settled plane of operations. I have long maintained that nothing really useful can be accomplished in this country in the way of looking for oil unless all the available data are first of all collected and studied, so that some reliable conclusions may be come to with regard to the conditions under which oil may reasonably be looked for. I have even advocated that the Government should employ the services of their Geological Survey Department for the purpose. The pages of your journal for several years past will provide evidence of my views on this matter. I had no idea at all that Mr. Macalister was going to return to London after a very brief stay in the country, with the object of launching the flaring prospectus which appeared in the London papers, and in which, to my extreme annoyance, my name appeared, ostensibly in support of the scheme of the Consolidated Oil Fields of South Africa, Ltd. Although I believe that this country has not yet been systematically explored for oil, I do not consider that the prospects of finding it warrant anything like the excitement which the promoters of the undertaking in question have endeavoured, it seems, to create, nor the extravagant financial proposals which are outlined in their prospectus.—I am, etc.,

J. E. MILLS DAVIES.

More Geological Truth Tablets.

To the Editor, *South African Mining Journal.*

Sir,—In the latest "Transactions of the North Staffordshire Institution of Mining Engineers," there is a paper by Mr. A. R. Sawyer on his New "Rand Gold Fields," in which are the following gems: (1) "Not one of the reefs of the Rand between the Main Reef series and the Hospital Hill slate is as yet found to be payable." (2) "The writer leaves out of account the Du Preez Rietfontein Reef (reefs I suppose he means !), as, although Dr. Mellor and other geologists are of opinion that this reef belongs to the Upper Witwatersrand System, some authorities are still of opinion that it belongs to the Lower Witwatersrand System. (3) "It is, therefore, not astonishing that a payable reef should not so far have been encountered in this section of the New Rand area." No. 1 is a libel on the Rand, as there are four payable series of reefs between Main Reef series and the Hospital Hill slates, all of which have been found, and traced by myself and others, years ago. No. 2. If by this time well-known geologists are not in accord that Du Preez series lies between Main Reef series and Hospital Hill slates—with the Van Ryn series above and the Government Reef series below—then their opinions are "not worth tuppence," as Lord Milner would say. No. 3. If Mr. Sawyer's "induction" is correct, *it is* astonishing, on the contrary, that he has not struck a payable reef before getting to his 17th borehole, in which he hopes to intersect Main Reef series. Everyone wishes Mr. Sawyer and his friends here, and at Home, the best of luck for their persistence in boring into covered country, whilst others in uncovered country, in the O.F.S., with reefs and values exposed, threw up the sponge after two or three holes—wrongly placed, of course, as usual. Mr. Sawyer evidently whole-heartedly agrees with Dr. Mellor, of the Geological Survey, that there are no reefs of value underlying Main Reef series, as he quotes him freely in his paper, but he does not say if he expects "his" Main Reef with a shale foot, like the rest of them, or leaves it to the womb of time. From Heidelberg to the Vaal River our Witwatersrand age is triplicated—*vide* Heidelberg, Malanskraal, and Hex River ranges, dipping north, with a syncline thrown in. The New Rand gold field is, in my opinion, a separate fracture, dipping south. What does it matter which way any fragment of our Witwatersrand age dips, as you cannot connect them always—Nature didn't bother her head about it, so why should we? Take an egg, tap it, crack it, as much as you like, put it on to boil, up comes the albumen—Nature's cement for its orb. One piece of egg shell will dip this way, that way, any way. So with the fragments of the earth's crust when the last bust up took place, as it will again some day, when we microbes shall know all about it and how it's done. The earth's crust is not quite as elastic and plastic as some geologists seem to imagine. In my opinion the anticline and syncline business is overdone and exaggerated. I prefer my egg theory every time, comparing its shell to the earth's crust, the albumen to the molten, and the yolk to the molten solid. The idea may be antiquated, but it beats the wrinkley grenadilla, with its anticlines and synclines, or even the onion which one has to similise with sometimes. When thinking out the gaseous theories which crop up occasionally, then I hitch off on to the electioneering egg, or the not quite full one, and so on, as Nature is very simple in her ways if we only knew it. The old Stanhope G.M. Co., in which life was supposed to be extinct, has been resuscitated, and is good apparently for many a day yet. So will it be with other outcrop companies which are supposed to be nearing their end, unless they are well drilled into before being given up. Anyway they are all destined to become deep levels to my underlying reefs whatever happens.—Yours, etc.,

SCOTT ALEXANDER.
"Rand Stratigraphist."

Johannesburg, December 31st, 1912.

[Dr. Mellor has not stated that the Rietfontein series belongs to the Upper Witwatersrand System, neither has he expressed any opinion, as far as we are aware, about the value of reefs below the Main Reef series.—Ed. *S.A.M.J.*]

ANSWERS TO CORRESPONDENTS.

"Village Deep Shareholder" (Jeppes).—The points raised in your letter have already been dealt with.

J. H. H.—There are over one hundred companies operating in Nigeria, with an aggregate capital of close on nine millions sterling. The majority of these are tin mining companies, a large number of which are operating in the Bauchi area. We suggest that you purchase a copy of the second edition of the "Nigerian Investor's Manual." It is procurable from the "Financial World," Mildmay Chambers, 69, Bishopgate, London, price one shilling.

Tell advertisers you saw it in the *South African Mining Journal.*

MINING EXAMINATIONS.

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RAND MINES' SUBSIDIARIES: A QUARTER'S RESULTS.

The following is a tabulated summary of the working operations of certain of the companies in which the Rand Mines, Ltd., holds shares for the financial quarters ending 31st July and 30th September, 1912.

	Rose Deep, Limited.	Geldenhuis Deep, Limited.	Ferreira Deep, Ltd.	Crown Mines, Limited.	Durban Roodepoort Deep, Ltd.	New Modderfontein G.M. Co., Ltd.	City Deep, Limited.	Village Deep, Limited.	Bantjes Cons. Mines, Ltd.	Modderfontein B. Gold Mines Ltd.	East Rand Proprietary Mines, Ltd.	Main Reef West, Limited.	The Village Main Reef G.M. Co., Ltd.	The Jupiter G.M. Co., Ltd.	Nourse Mines, Ltd.	The Wolhuter Gold Mines, Limited.
FINANCIAL QUARTER ENDING.. ..	September 30, 1912.														July 31, 1912.	
Mine																
DEVELOPMENT WORK—																
No. of feet driven, sunk and risen, exclusive of Stopes	3,775	6,313	3,190	10,022	3,667	3,709	4,512	4,251	4,215	3,301	11,351	3,332	216	2,932	7,234	3,191
MAIN REEF—																
Distance exposed (feet)	719	642	189	302	1,585	2,317	600	—	—	1,966		—	—	—	1,470	—
Width (inches)	36	18	41	33	27	10	26	—	—	14		—	—	—	12	—
Assay Value	28s. 0d.	39s. 6d.	16s. 10d.	13s. 2d.	46s. 2d.	196s. 7d.	15s. 9d.	—	—	81s. 4d.		—	—	—	26s. 0d.	—
MAIN REEF LEADER—																
Distance exposed (feet)	1,523	2,760	918	3,030	—	—	2,640	3,169	605	—	27	—	—	—	3,096	—
Width (inches)	17	8	42	25	—	—	21	37	15	—	10·4 dwt	—	—	—	13	—
Assay Value	65s. 11d.	80s. 3d.	63s. 0d.	73s. 7d.	—	—	92s. 4d.	47s. 1d.	75s. 7d.	—		—	—	—	73s. 2d.	—
SOUTH REEF—																
Distance exposed (feet)	1,315	4,697	1,027	1,710	1,490	—	—	764	1,925	—		—	205	—	1,715	—
Width (inches)	15	17	30	32	10	—	—	22	9	—		—	18	—	15	—
Assay Value	39s. 11d	60s. 6d.	92s. 5d.	70s. 9d.	119s. 3d.	—	—	56s. 1d.	114s. 3d.	—		—	39s. 2d.	—	86s. 10d.	—
Reduction Works																
Ore received from Mine (tons) ..	234,032	180,030	186,843	539,691	92,146	132,329	137,698	175,117	80,240	112,646	504,525	67,878	152,357	—	196,831	101,422
Ore received from Surface Dumps (tons)	—	—	—	—	—	—	4,428	—	—	—	—	—	—	—	—	—
Waste sorted out (per cent.) ..	15·7	18·6	15·7	11·0	17·7	8·4	15·4	14·7	11·6	11·6	10·7	12·9	15·4	—	15·4	12·8
Tonnage crushed	196,400	146,100	157,970	480,900	75,780	121,700	120,100	149,900	70,843	100,370	449,850	59,091	129,040	119,300	166,300	89,100
Number of stamps operating ..	300	300	240	660	100	180	120	180	85	80	820	97	220	95	260	120
Number of tube mills operating ..	7	7	6	24	3	7	9	7	3	5	—	3	5	—	7	4
Value of Ore before crushing—																
Mill yield per ton	18s. 2d.	20s. 2d.	26s. 4d.	21s. 1d.	20s. 9d.	33s. 6d	21s. 9d.	21s. 6d.	17s. 9d.	21s. 1d.	—	—	25s. 1d.	—	22s. 2d.	—
Assay value of pulp	10s. 1d.	10s. 6d.	13s. 9d.	11s. 9d	10s. 7d.	10s. 10d.	12s. 10d.	9s. 10d.	12s. 4d.	17s. 9d.	—	—	13s. 11d.	—	9s. 1d.	—
Total	28s. 6d.	30s. 8d.	40s. 1d.	32s. 4d.	31s. 4d.	44s. 4d.	37s. 7d.	30s. 4d.	30s. 1d.	38s. 10d.	—	—	39s. 0d.	—	31s. 3d.	—
Total yield (fine ozs.)	65,904	50,680	74,142	179,376	27,189	62,438	52,326	52,252	25,154	44,754	174,268	22,269	60,411	29,968	59,101	29,164
Yield per ton	28s. 2d.	28s. 2d.	39s. 5d.	31s. 1d.	30s. 2d.	43s 1d.	36s. 7d.	29s 3d	29s. 10d.	37s. 5d.	33s. 2d.	31s. 7d.	39s. 4d.	21s. 1d.	30s. 0d.	27s. 5d.
Accumulated slimes treated (tons) ..	—	6,160	3,570	—	—	7,826	7,000	—	—	—	—	—	7,710	—	3,972	—
Accumulated slimes yield (fine ozs.)..	—	642	691	—	—	519	967	—	—	—	—	—	688	—	551	—
Working Expenses																
Cost	£170,290	£197,546	£168,522	£442,296	£90,719	£127,111	£148,312	£150,156	£81,328	£86,329	£176,283	£62,160	£111,070	£112,515	£175,451	£76,989
Cost per Ton Milled	17s. 4d.	£1 7 0	£1 1 4	£0 18 5	£1 3 11	£1 0 11	£1 4 8	£1 0 0	£1 3 10	£0 17 3	£1 1 2	£1 1 0	£0 17 2	£0 18 10	£1 1 1	£0 17 3
Revenue																
Value of Gold produced	£276,810	£212,576	£311,285	£752,957	£113,868	£262,109	£219,531	£218,967	£105,310	£187,652	£745,497	£93,276	£253,028	£125,817	£249,214	£122,151
Value per Ton Milled	£1 8 2	£1 9 1	£1 19 5	£1 11 1	£1 10 0	£2 3 1	£1 16 7	£1 9 2	£1 9 9	£1 17 5	£1 13 2	£1 11 6	£1 19 3	£1 1 1	£1 9 11	£1 7 5
Working Profit																
Amount	£106,550	£15,030	£142,763	£310,661	£23,149	£134,965	£71,219	£68,811	£20,982	£101,323	£269,211	£31,116	£141,958	£13,302	£73,763	£45,165
Per Ton Milled	£0 10 10	£0 2 1	£0 18 1	£0 12 11	£0 6 1	£1 2 2	£0 11 11	£0 9 2	£0 5 11	£0 18 2	£0 12 0	£0 10 6	£1 2 1	£0 2 3	£0 8 10	£0 10 2
Other Sources																
Net Revenue or Expenditure—																
Debit	£682	—	—	£12,305	£721	—	—	—	£2,470	—	—	—	—	—	—	—
Credit	—	* £2,490	* £3,308	—	—	*£3,609	* £442	£51	—	£1,313	—	—	*£8,063	£3,952	* £1,764	—
Net Profit..	£105,868	£17,520	£146,071	£298,356	£22,428	£138,574	£71,661	£68,865	£18,512	£102,666	—	—	£150,021	£17,254	£75,527	—
Capital Expenditure	£783	† £2,175	£1,758	†£45,805	£1,458	† £20,446	† £609	† £5,564	£4,525	£1,581	£61,616	£13,159	—	£15,105	£4,322	£1,740
Cash Position																
Financial Position, Cr. Balance ..	£118,562	£77,238	£126,519	£512,571	£9,091	£198,247	£198,131	£115,642	£18,445	£169,748	£352,921	—	£202,221	—	£33,991	—
Less Cash Assets (Stores, Live-stock, etc.) ..	£37,863	£36,346	£51,632	£823,871	£19,519	£78,339	£49,551	£35,093	£27,650	£16,463	£170,665	—	£23,284	—	£50,257	—
Balance Net Cash after allowing for Liabilities	£80,699	£29,892	£74,917	—	—	1£119,908	£148,583	£80,549	£20,695	£123,2:5	£182,259	—	£268,937	—	—	—
Financial Position, Dr. Balance ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Add Cash Assets (Stores, Live-stock, etc.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Balance Net Cash Liability ..	—	—	—	£311,300	£10,428	—	—	—	—	—	—	—	—	—	£16,266	—
Interim Dividends Declared—																
Payable to Shareholders registered on books as at	—	—	Sept. 30, '12	—	—	—	—	—	—	—	—	—	—	—	July 31, '12	—
Rate per cent.	—	—	22½ %	—	—	—	—	—	—	—	—	—	—	—	5%	—
Total amount of distribution ..	—	—	£220,500	—	—	—	—	—	—	—	—	—	—	—	£41,391	—

* Including Accumulations. † Exclusive of the proportion of an annuity payable to the Government in respect of mining rights acquired under certain claims ‡ Exclusive of the balance of Working Capital on hand amounting to £182,979.

THE WEEK IN THE SHAREMARKET.

Firm But Quiet—Another Holiday Week— Waiting for a Lead.

HOLIDAYS have again interfered with business this week, and prices have remained quietly firm. The prolongation of the peace negotiations are, of course, inimical to business, and until they come to an end not much activity can be expected. The dividend declarations are most favourably regarded, and it is certain that, given fair conditions, their distribution should prove a real fillip to the market. The speech made by the chairman of the African Banking Corporation should have a very good effect in London, as it emphasized the fact that this country is still crying out for more capital to develop its enormous natural resources.

	Friday, 27th	Sat., 28th.	Monday, 30th.	Tuesday, 31st.	Wed., 1st.	Thurs. 2nd.
African Farms	16 3B	15 3B	16 3	16 0	...	15 9s
Aurora West	10 0B	10 0B	10 0B	10 0B	...	...
Apex Mines	25 0s	25 0s	24 6B	25 0	...	25 6B
Bantjes Consolidated	24 6B	24 9B	24 6B	25 9B	..	23 0B
Benonis	3 6B	3 7B	4 0B	3 8B	...	4 0
Bushveld Tins	0 9B	..	0 9s	0 9B	...	0 9B
Brakpan Mines	83 0B	...	82 0B	82 0B	...	...
Blaauwbosch	61 3E	61 3B	60 0	...	...	57 6B
Breyten Collieries	...	...	34 6B	32 6B	...	30 0B
British S.A.	...	...	...	25 0B	...	25 6B
City and Suburban	45 6B	45 3B	45 3B	46 0B	..	...
City Deeps	60 0B	60 0B	61 0B	61 0B	...	59 0B
Cloverfield Mines	6 4	6 4B	6 3B	...	..	6 6
Cons. Langlaagtes	...	30 3B	28 3B	28 3B	..	28 6B
Cons. Main Reefs	19 6B	19 6	19 6	19 3B	..	18 3B
Coronation Freeholds	0 6B	...	...	...	...	0 6B
Cons. Mine Selections	...	13 0B	13 6B	...	...	14 0B
Coronation Colls.	17 0B	17 0B	17 0B	18 0B	...	18 0B
Cinderella Cons.	22 6B	...	...	...	...	...
Clydesdales	...	8 3B	8 6B	...	...	...
East Rand Cent.	10 9B	10 9B	10 9B	10 9B	...	11 0B
East Rand Coals	2 4B	2 6B	2 4B	2 6B	...	2 4B
East Rand Deeps	2 9B	2 9B	2 9B	2 9B	...	2 9B
East Rand Props.	54 0B	57 6B	56 0B	...	...	...
East Rand Deb.	£93	£94	£93	£93	...	...
Eastern Gold Mines	...	1 11B	1 10B	1 10B	...	2 0B
Frank Smith Diam.	9 0B	9 0B	9 ½B	9 6	...	9 9
Govt. Areas	20 3B	20 3B	20 0B	20 0B	...	20 3B
Glencoe (Natal) Colls	7 0B	7 0B	7 0B	7 0B	...	6 6B
Geduld Props.	...	...	...	23 0B	...	22 0B
Hex Rivers	2 0B	2 0B	2 3	2 0B	...	...
Jupiters	...	...	12 0B	...	...	...
Klerksdorp Props.	...	...	3 3B	2 11B	...	...
Knight Centrals	13 6	12 9B	12 3B	13 0B	...	12 6B
Luipsaardsvlei Estates	...	...	...	12 0B	...	...
Lace Props.	3 9B	3 10B	3 10B	3 10B	...	3 0B
Lydenburg Gold Farms	2 5	2 4B	2 4B	2 5B	...	2 4B
Main Reef Wests	19 0B	19 3B	...	19 0B	...	18 6B
Modder B's	72 6B	72 0B	72 0B	72 0B	...	69 0B
Middelvlei Estates	...	1 4B	1 4B	1 4B	...	...
Modder Deeps	40 0B	39 0B	...	39 0B	...	39 0B
New Eras	8 0	7 9B	7 6B	7 6B	...	7 6
New Kleinfonteins	21 6B	20 0	20 0B	20 0B	...	...
New Rietfonteins	9 6	9 0	9 3B	9 3	...	8 0B
New Boksburgs	...	...	2 0B	2 0B	...	...
New Geduld Deeps	...	2 6B	2 6B	2 6B	...	2 6B
New Eland Diam.	26 0B	26 0B	...	...	...	...
New Unifields	...	17 0s	14 9B	16 9B	...	...
Orange Diamonds	1 5B	1 4B	1 5	1 4B	...	1 4B
Pretoria Cement Co.	51 6B	52 6B	54 0B	53 0	...	49 0B
Princess	8 3B	8 3B	8 3B	8 3B	...	...
Rand Collieries	6 0B	...	...	...	...	...
Rand Nucleus	3 0B	3 0B	3 3B	3 0B	...	3 2B
Randfontein Estates	30 9B	30 6	30 0s	30 0B	...	29 3B
Randfontein Deeps	...	...	...	...	...	5 3B
Rooiberg Minerals	33 0B	33 9	33 9	33 9B	...	30 6B
Rand Klips	4 6	6 0	5 0	4 3B	...	4 0B
Simmer Deeps	2 6B	2 6s	2 6B	2 6B	...	...

B Buyers. S Sellers.

	Friday, 27th.	Sat., 28th.	Monday, 30th.	Tuesday, 31st.	Wed., 1st	Thurs 2nd.
South African Lands	4 4B	4 4	4 4B	4 4B	...	4 4B
Sub Nigels	11 3s	...	11 0B	11 0B	...	10 0B
Springs Mines	15 9B	16 0B	15 9B	...	...	15 9B
Shebas	5 3s	...	5 3s	...	...	5 3s
S. A. Breweries	...	38 6B	39 0B	39 0s	...	39 0s
Trans. G.M. Estates	50 0B	50 6B	50 0B	50 0B	...	52 6B
Trans. Coal Trusts	47 6B	...	...	47 6B	...	45 0B
Tudors	...	1 0s	...	...	...	...
Temple Tins	0 8B	0 8B	0 9	0 9s	..	0 9B
Van Ryn Deeps	19 3B	19 6	19 6	19 6B	...	19 6
Witwatersrands	62 0s	60 0B	61 6B	60 0B	...	...
Wolhuters	18 0B	...	18 0B	...	...	...
Wit. Deeps	53 0B	52 6B	54 6s	53 0B	...	...
Witbank Collieries	45 0B	...	45 0B	45 3B	...	45 0B
West Rand Est.	3 6B	...	3 6B	...	...	3 9s
West Rand Con.	15 9B	15 9B	...	...	...	...
Zaaiplaats	34 6	34 5	34 9	34 0	...	34 3

B Buyers. S Sellers

Companies in Liquidation.

Haugregil Gold Mining Co., Ltd., The; a general meeting will be held at the office of the liquidator, E. W. Nash, Pilgrims Rest, on January 7th.

Steven-Jennings & Broad, Ltd., December 10th; claims to be filed within three weeks from December 12th, to the liquidator, Hugh Pole Poyser, 141 Longmarket Street, Capetown, and debts to be paid forthwith.

Prince Albert Gold Fields, Ltd., The; a general meeting will be held at Rhodes' Buildings, St. George's Street, Capetown, on January 4th. Fred. J. Centlivres, liquidator.

Ferreira Gold Mining Co., Ltd. (voluntary); a general meeting will be held at The Corner House, Commissioner Street, Johannesburg, on January 15th. H. A. Rogers, H. C. Boyd, E. J. Renaud, and W. H. Dawe, liquidators.

George Ford, Ltd.; a meeting will be held at Trust Buildings, Johannesburg, on January 21st.

Nawton Sinclair Papley Syndicate, Ltd.; a general meeting will be held at the office of Geo. C. Simmonds, liquidator, Lydenburg, on January 17th.

Benoni Exploration Syndicate, Ltd. (voluntary), December 4th; a meeting will be held at Fort Street, Benoni, on December 23rd. Robert Barnet, liquidator.

The Haugregil Gold Mining Co., Ltd.; a general meeting will be held at the office of E. W. Nash, liquidator, Pilgrims Rest, on January 7th, 1913.

Ulster Finance and Investment Co., Ltd.; first meeting, Master's office, Pretoria, December 27th, and second meeting, January 10th. Charles E. Allen, liquidator.

Goldsmid, Ltd.: the adjourned meeting of creditors and contributories has been further adjourned to December 21st, at the same place.

Glynn's Extension (1910), Ltd.; a further meeting, Master's office, Pretoria, January 3rd.

British Finance Co., Ltd, The (provisionally). Andrew Kemp, provisional liquidator.

Contracts Open.

The South African Railways invite tenders for the following:—Pietermaritzburg—Steelwork for extension of machine shop (31st December, 1912). Electrical wire.—Due 31st December, Bags: Grain, coal, etc., 214,600.—Due 14th January, 1913.

The Municipal Council of Johannesburg invites tenders for the supply of forage (9th January).

The South African Railways and Harbours invite tenders for the supply of 3,750 wheelbarrows (January 7).

The Germiston Municipality invites tenders for the supply of materials required in connection with the trackless tramways scheme, as follows:—(1) Rail-less cars and tower wagon; (2) cables, trolley wire, feeder pillars, span wire, etc.; (3) converters, transformers, switch gear, etc.; (4) overhead fittings, ears, insulators, strains, frogs, crossings, etc.; (5) poles, bracket arms, scrolls, etc. (February 3).

The Secretary to the Tender Board, S.A.R. Headquarter Offices, Johannesburg, invites tenders for the supply of hardwood logs and planks (January 14).

The Secretary to the Tender Board, South African Railways, Johannesburg, invites tenders for the supply of 31,800 metallic filament lamps for train lighting purposes (January 21, 1913).

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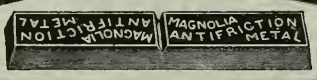

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Engineering Notes and News.

Official Statistical Returns.

In terms of the Mines, Works, and Machinery Regulations Nos. 138 and 179, framed under Act No. 12 of 1911, owners and users of machinery are called upon to furnish a return of all machinery erected or in use as at the 31st of December, 1912. The forms prescribed for this purpose are obtainable gratis on application to the Office of the Government Mining Engineer, P.O. Box 1132, Johannesburg, or Room 44, New Law Courts Buildings. This return must be rendered on or before the 25th of January, 1913. The definition of the word "machinery" is as follows:—"Machinery" shall mean and include stationary and portable boilers, steam apparatus, steam and other engines, including locomotives, and all appliances or combinations of appliances which can be used for developing, receiving, transmitting, or converting either mechanical or natural power, but shall not include any locomotives owned or used by the Department of Railways and Harbours.

Some Modern Electrical Machinery.*

[By F. H. Michell, Member.]

During a recent trip to Europe the writer visited several electrical factories and works, and in response to an invitation from the Council of this Institute presents the following notes, dealing briefly with some of the modern machinery inspected. The following important factories and works were visited:—Siemens' Dynamo Works, Stafford; Siemens' Cable Works, Woolwich; A.E.G. Turbo-Generator Works, Berlin; A.E.G. Dynamo Works, Berlin; Siemens' Dynamo Works, Berlin; Siemens' Cable Works, Berlin; Greenwich Power Station; Moabit Power Station, Berlin. In addition to the above, other large power plants were visited, at one of which the engineer, in order to save copper, has eliminated the negative bus-bar, joining the negative leads together at a convenient point. During a cycle tour some interesting small hydro-electric plants were discovered, one of which, at Porlock, in Somerset, consists simply of a bucket water wheel driving a dynamo. Perhaps the most striking feature of up-to-date electrical manufacture is the high state of standardization and specialization reached in a branch of engineering so comparatively young. In passing through a large factory one is astonished at the rapidity with which the various parts of electrical machinery are built up by different departments, the workers in which have generally no idea concerning the principles or utility associated with the finished article. In many departments, including armature winding, women and girls are employed carrying out the work in most cases as satisfactorily as, and in some cases more satisfactorily than, men, and working for approximately half the wages. A careful study of such conditions modifies the surprise with which one listens to the statement that in one large factory in Berlin. 10,000 small motors, up to 5 h.p., are turned out monthly. The space outside the factory is covered with thousands of castings, waiting to join the continuous stream which passes through the factory to all parts of the world. The process of construction of modern electrical machinery is intensely interesting. Sheets of Scandinavian iron are delivered by rail to the factory. They are first coated with an adhesive upon which thin paper is laid. The sheets are next passed over a heating apparatus consisting of a number of small burners—the paper on the upper side of course. The velocity is adjusted so as to render the adhesive suitably dry, the edgings of paper being at the same time burnt off, without injury to the rest. The sheets may be passed on at once to the stamping department, the machines in which are operated by youths or women. The discs are conveyed to a department in which they are assembled in the forms of stators, rotors, armatures, etc., etc. One is struck at the apparent simplicity of the whole process, and pauses to think of the master mind, the designer, who is responsible for each step. When the cores are finished off they are ready for the windings, and in the case of the continuous current armature, for the commutator. The latter is built up expeditiously and skilfully by men who know little of, and troubles less about, the ultimate unit. A visit to the winding department naturally follows, and one cannot withhold expressions of admiration at the way in which the operatives wind, form and insulate the various coils. Eventually the copper and iron are assembled in another department, and the finished machines are ready for the test bed, whence they pass to all quarters of the world. The writer was deeply interested in a large turbo-generator factory in Berlin, in which one of the two largest generators so far designed (20,000 k.v.a.) was under construction. The alternators built in this factory are of the revolving field type, and it is held by the makers that the rotors are designed and built so as to fulfil the following requirements: (1) Capability of withstanding enormous centrifugal force; (2) good balance guaranteed by solidity of design; (3) critical velocity avoided; (4) satisfactory dissipation of large quantities of heat. The magnet windings are held to the rotor by special clamps, which are dovetailed into slots milled in the rotor shaft. Rotors for machines of all sizes from 100 to 20,000 k.v.a. have been built according to this design.

*From paper read before the S.A. Institute of Electrical Engineers.

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EARTHED v. UNEARTHED NEUTRALS ON ALTERNATING-CURRENT SYSTEMS.*

[By J. S. Peck, M.I.M.E.]

It is intended in this paper to discuss the various questions involved, and to show why under some conditions of operation it is becoming general practice to earth the neutral, while under others it may be advisable to operate with the neutral unearthed. While several advantages may be claimed for the earthed neutral, there are but two which are really of any great value. These are: (a) The limiting of the voltage between line wires and earth; (b) the possibility of cutting off any wire or feeder in the event of an earth upon it. The chief objection to earthing is the fact that the system cannot be operated with an earth on any line wire. It is well known that in an unearthed three-phase system, where the impedance of each phase to earth is equal, each of the three conductors assumes a potential above earth equal to 58 per cent. of the voltage between wires while the neutral point is at earth potential, but any difference in the impedance causes the potential of the neutral point to shift, bringing the phase having least impedance nearer to earth potential and raising the others to a potential corresponding higher above earth. When one phase is earthed, it assumes earth potential, and the other phases reach full line potential above earth. When the potential of each phase to earth is the same, the charging current to earth will be equal in all phases, but when one phase is earthed the charging current to earth is increased by 73 per cent. in both of the unearthed phases, and all of this current will return to the generator through the earthed phase and will pass into the faulty wire at the earthed point. Earthing the neutral means that this point is fixed at earth potential, and the three line wires are fixed at a potential 58 per cent. above earth. If the neutral point is earthed through a resistance, and one phase is earthed, current flows through the neutral resistance, and the drop across this resistance measures the voltage between the neutral point and earth, so that the neutral point is not fixed definitely but depends upon the amount of resistance and the current flowing through it. With the earthed neutral very simple and reliable apparatus can be provided, which will cut out any feeder in case an earth occurs upon it. This apparatus may be of the Merz-Price balanced protective type, or it may be of that type which is based upon the principle that the resultant current in a three-phase circuit is zero. It is evident that under normal conditions the resultant current in the secondaries of the three transformers is zero, therefore no current can flow through the trip coil; but should an earth occur on one of the wires, the circuits will be unbalanced and current will flow through the trip coil. This apparatus may be adjusted to work on a very small earth current. Still another possibility is to put a trip coil in series with the earth connection, but this arrangement is not so satisfactory as those previously mentioned, in that it does not discriminate as to the feeder to be cut off. Where a large cable network is supplied from common bus-bars the arrangement may work satisfactorily without the neutral point being earthed. The reason for this is as follows: In the event of an earth on any wire, the charging current to earth on all of the cables on the system will be returned to the bus-bars through the wire which is earthed. Therefore the current balance on the earthed feeder will be upset and the circuit-breaker operated. This arrangement is, however, limited in its application, and is not so positive as when there is a current flow between earth and generator neutral. All modern three-phase generators are insulated to stand operation without the neutral being earthed, so that no consideration of reduced first cost due to limiting the voltage to earth by earthing the neutral need enter the problem. The question of risk of breakdown with earthed or unearthed neutrals may also be practically neglected. Three classes of service will be considered: (a) Generator supplying network of underground cables; (b) generator supplying overhead transmission circuits without transformers; (c) generator supplying overhead transmission line through step-up transformers. In case (a) an earth on any phase of a cable is almost certain to develop into a short-circuit between phases, and on a large system the result of a short-circuit on a cable is usually to burn off a section of the cable, perhaps to damage adjacent cables, and sometimes to set up surges which may cause serious breakdowns elsewhere on the system. Since the majority of breakdowns on cables are to earth, it is therefore extremely desirable that a cable be cut off as soon as an earth develops, and as this can be done quickly and with certainty where the generator neutral is earthed, it is becoming general practice to do this in all stations of this class. Thus practically the only question to consider is whether the neutral shall be earthed

*Abstract of paper read before the Institution of Electrical Engineers at Manchester, November 19th, and London, November 28th, 1912.

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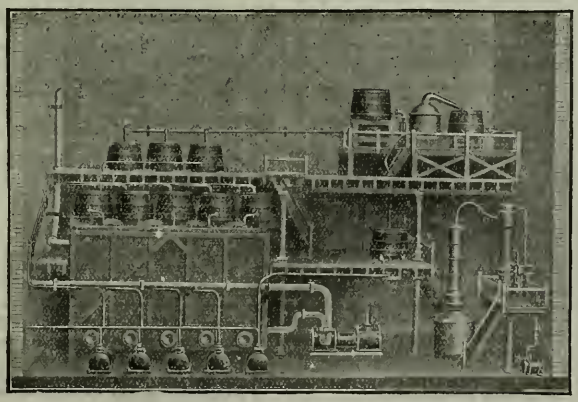

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STILLS.

EVAPORATORS.

solidly or through a resistance, and, where there are several generators in parallel, how many of them should be earthed. The only object in inserting resistance between generator neutral and earth is to limit the rush of current which occurs whenever there is an earth on the system. If balanced protective apparatus is used, the resistance may be made so high as to keep down the current rush to a comparatively low value, because the protective apparatus may be set to operate with a very small unbalancing in current; but where plain overload protection is used—and this applies to the majority of cases—the resistance should be low enough to pass sufficient current to trip the breakers on the largest feeder, but high enough to prevent damage to generator windings, and, if possible, to prevent serious burning at the point of accidental earth. In general, earthing resistances are built up of cast-iron grids mounted on porcelain insulators, and should be located in a fireproof compartment. They are usually designed to have sufficient heat capacity so that full star voltage may be maintained across them for at least 15 seconds without a temperature rise of approximately 300° C. being exceeded. The ohmic value of the resistance is determined by the current required to trip the breakers on the largest feeder. Where it is desired to earth through a resistance, and two or more generators are operated in parallel, the simplest and best method is to connect the neutrals of all the generators to a common bus-bar which is earthed through a suitable resistance. Then, regardless of the number of generators, the value of the earth resistance will always be the same. With this arrangement switches must always be provided between each generator and the neutral bus-bar, otherwise a generator disconnected from the main bus and shut down may be raised to a dangerous potential above earth, in case of an earth on any feeder. The objection to this method of connection is that in certain cases very heavy currents may circulate through the neutral connections and generator windings. It should be noted, however, that the neutral current divides equally among the three-phases of the generator. With 30 per cent. of full-load current in the neutral the resultant heating in the generator is increased by only 1 per cent. at full load and is quite negligible. It would seem advisable, therefore, to try connecting the generator neutrals solidly together, especially in the case of turbo-generators, in which there is no angular variation in speed, and therefore less chance of circulating currents. Should satisfactory operation be impossible, then only one generator should be connected to the neutral bus, or resistance may be inserted between each generator and the neutral bus. (b) In this case there are usually a comparatively small number of transmission lines, and an earth on one wire is not likely to cause a short circuit between wires, so that with an unearthed neutral it is quite possible to run for a long period with one wire earthed. If there are not sufficient feeders to all distributing centres to make it possible to cut out a defective one and deliver full load over the others, the possibility of being able to operate with one wire earthed may be sufficient far to outweigh the only practical advantage gained by earthing the neutral, which is the ability quickly to cut off a feeder in the event of an earth upon one wire. In the majority of cases the weight of the argument is in favour of operating with the generator neutrals unearthed. (c) In this case there are conditions involved which make it extremely desirable to earth the neutral or else to earth the low-tension side of the transformers. If one terminal of the high-tension side of a single-phase transformer be connected to a high-tension line, and the low-tension be open-circuited, the high-tension winding assumes a potential above earth equal to that of the line to which it is connected. The high-tension winding then acts as one plate of a condenser, with the low-tension and core as the other plates. The low-tension winding also has static capacity to the iron, and it will therefore assume a potential above earth, the value of which will depend upon the relation between its capacity to the high-tension winding and its capacity to earth. In practice it may easily assume one-half the potential of the high-tension winding. If—K = capacity between high-tension and low-tension, K_1 = capacity between low-tension and core, V = voltage of high-tension line, V_1 = potential of low-tension winding above earth,

$$V_1 = V \times K/K_1.$$

If both terminals of the high-tension winding are connected to the high-tension lines, the resultant potential of this winding above earth will be zero, and the resultant potential of the low-tension winding above earth will also be zero. If, therefore, one terminal of a transformer be connected to or disconnected from a line before the other, the low-tension winding during this period may assume a very high potential above earth and its insulation be broken down to earth. When the low-tension winding is connected to a generator, the generator winding also has capacity to earth, so that the capacity of the low-tension winding to earth is increased by this amount, and its voltage correspondingly reduced. If the capacity of the generator winding to earth $= K_2$, then the voltage of the low-tension circuit above earth $= V \times K/(K_1 + K_2)$. Thus, while the voltage is reduced by connecting the transformer and generator windings together, it may still be dangerously high. When both terminals of the high-tension winding are connected to the line, and one wire is earthed, the resultant voltage of the high-tension winding above earth will be $V/_2$, and that of the low-tension winding will be one-half as great as before, but may still be dangerously high. In the case of a three-phase transformer the conditions are much the same as described above for a single-phase transformer. It is evident that when the neutral of the high-tension system is unearthed there are several possibilities of obtaining a high voltage on the generator windings, viz., in the case of an earth on one high-tension wire, or in the case of the switches in the three phases not operating simultaneously.

(To be continued.)

Write-ups.

The following editorial notes have just appeared in our American contemporary *Power*:—"For the benefit of the reader and advertiser alike we take this occasion to declare our position with regard to publicity matter. By the latter is meant anything emanating from manufacturers, whether news, descriptive matter, test data, or what not, issued for the purpose of keeping themselves before the public. An editor must judge of the availability of matter from the standpoint of the subscriber. Is it the kind of matter that the readers pay for, the printing of which will satisfy them and cause them to continue their respect for and use of the paper? Nobody has a more up-to-date knowledge of power-plant problems than the makers of power-plant apparatus. Each is, or should be, a specialist in his own line. Access to this knowledge would be a godsend to an editor. Much of it might be printed to the advantage of the manufacturer. Most manufacturers are either so busy that they cannot stop to tell or write what they know, or are afraid it might be of some use to their competitors, and so hide their talents and those of their designers and engineers, under a 'talk-and-be-bounced' order, instead of writing themselves and letting their people write themselves, and keeping the firm to the front as experts and specialists in their lines."

Owing to the continued expansion of their business, Messrs. W. F. Stanley & Co., Ltd., have been compelled to provide much large office accommodation and will now occupy the whole of the upper part of the premises at 286, High Holborn, London, where their show rooms have been on the ground floor for some time, retaining their old premises at 4 and 5, Great Turnstile for export only.

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MECHANICAL ENGINEERING ON THE S.A.R.

Points from Recent Annual Report.

From the report on the working of the S.A.R. Mechanical Department for the year ended 31st December, 1911, by Mr. D. A. Hendrie, chief mechanical engineer, we extract the following:—The bringing about of uniformity of practice and methods in the various shops has been engaging my attention very considerably, and I am pleased to report that arrangements have been completed whereby similar methods will operate at the various workshops in connection with the issue of stores, method of accountancy, the use of time clocks, job cards, and various other details necessary to obtain accurate comparative results of working which are so essential in connection with the manufacture and repair of equipment. The second meeting of mechanical engineers was held in Capetown in May, 1911, and since that date an independent committee was appointed to inquire into and report as to the best methods to be adopted for the most satisfactory conduct of the Mechanical Department; and it is satisfactory to note that the finding of this committee practically endorses in nearly every case the methods of operation suggested by my department, and which are gradually being given effect to. During the period under review, the mechanical sections of the Harbour Departments at Durban, East London, Port Elizabeth and Capetown have been amalgamated with the workshops in the vicinity of each harbour; and, in a similar manner, mechanical workmen, previously engaged and controlled by the Maintenance Department on purely mechanical work, as well as all necessary machines, etc., used in connection with such work, have been absorbed by my department, thus concentrating manufacture and repair of equipment as well as control of employees. A very considerable amount of work has been undertaken and drawings prepared in connection with the standardization of spare parts for engines and rolling stock, which will enable stocks to be considerably reduced and facilitate the ordering of spares generally. The renumbering of rolling stock has been successfully inaugurated. All engines, carriages, wagons, vans, etc., the property of the late Railway Administrations, have been classified under respective heads; renumbering lists have been issued to all concerned, and, although practically 27,000 vehicles are involved, the work is being carried out without in any way creating confusion with existing records of the various classes of stock. The Mechanical Department has been taxed considerably to meet the increasing demands for rolling stock made by the Transportation Department; and, as set forth hereafter, has been handicapped by lack of accommodation in many of the workshops in dealing expeditiously with the heavy repairs to engines and rolling stock generally, while the abnormal delays which have occurred in connection with the delivery of material from Home have retarded the completion of new rolling stock very considerably, and interfered to a large extent with the continuity of work which had been arranged in connection with the rolling stock and manufacturing programme generally. During the twelve months under review, twenty-two new 3ft. 6in. gauge engines were added to the stock of the Administration, while three other engines were taken over from the Natal Construction Department for open lines shunting work. The new engines may be briefly summarized as follows: 4—6—2 type, new classification, 10-C, 5; 4—8—2 type, new classification, 4, 2; 2—6—6—2 type, new clasification, M.F., 14; 2—6—6—2 type, new clasification, M.G., 1; total, 22. Three new narrow gauge engines were put into service, one being for the Hopefield line and the others for Natal lines. During the period mentioned 37 engines were removed from service, 12 having been sold and 25 scrapped. The latter consisted chiefly of the smaller and obsolete types. Altogether one hundred and thirty-one new coaches were put into service, of which eighty were for main line use and fifty-one were for suburban services. Of this quantity, ninety-five were built in South Africa and thirty-six were imported from oversea and erected. Twenty-six coaches were withdrawn from service. Of these, three were sold and twenty-three scrapped. The three sold were four-wheeled vehicles, and of the twenty-three scrapped, ten were bogies, one was six-wheeled, and twelve were four-wheeled vehicles. Six hundred and twenty-four new wagons were added to stock during the period. Of these, three hundred and fifty-seven were bogies and two hundred and sixty-seven were four-wheeled. One bogie and two hundred and twenty-seven shorts were built in South Africa, while three hundred and fifty-six bogies and forty shorts were imported from oversea and erected. Twelve bogie light tare vans were also built at Durban. Eighty-three wagons and vans were scrapped. Of these, fifteen were bogie wagons, sixty-two were short wagons, and six were short vans. Thirty-eight wagons were sold during this period. Of these, two were bogies and thirty-six were shorts. Included in the new locomotives placed on order during the year 1911, are several that present special features, notably in the case of the 12th class, 4—8—2 type, tender engines, with Schmidt superheaters, built by the North British Locomotive Company. This locomotive, which is the heaviest non-articulated engine working on any line of less gauge than 4ft. 8½in., is the outcome of experience gained with the "D" engine in the Natal Province, with modifications to suit the easier gradients and less severe curves on the Germiston-Witbank section, the chief difference being the increased diameter of coupled wheels, which are 5½in. larger than those of the "D" engine. The object in view, with this design, is to obtain an engine capable of hauling an exceptionally heavy load, and, at the same time, work the double trip from Germiston to Witbank and back within the limits of a working day, thereby utilizing the rolling stock to its fullest extent and enabling the best results being obtained from the trainmen generally without "booking off" at outside depôts, the present system of working the Mallet engine necessitating this being done after the arrival of the outward trip at Witbank. Ten of the "D" class engines, fitted with Schmidt superheaters, are being erected in Durban. These locomotives are similar to the "D" engines already in service, but with various modifications to the cylinders, valve gear, etc., consequent upon the adoption of the superheater; such engines show a material advantage over the older types of engine working with superheated steam on most sections of the road, where gradients are favourable and stopping places not too close together; but, on parts of the road where the latter conditions are not so favourable, the success of superheating is not so marked—a fact which proves the necessity for careful consideration when placing orders in future, as to the suitability of the engines to the particular section of the road over which it will be required to work. Fifteen engines of the Mallet articulated type, built by the American Locomotive Company, of somewhat similar design to the first of this class introduced in the Transvaal, have been put into service on the Germiston-Witbank section; fourteen of these are fitted with the Schmidt superheater, notably the difference in wheel diameter between the high and low pressure engines, the former being 3ft. 10in. diameter and the latter 4ft. 3in., thus giving a considerable acceleration as regards speed; the engine is arranged for saturated steam and is fitted with the Street mechanical stoker. Ten more engines of the Mallet type, for service in Natal, and of similar design to those now working in that Province, were on order at the close of the year and have since been placed in traffic. There are several modifications in these engines to those previously placed on Natal lines, more particularly in regard to boiler details, which I anticipate will effect an economic improvement. A Mallet engine of new design, built by the North British Locomotive Company, is being erected at Salt River Works; this engine is arranged on a different principle from the earlier types of Mallets running in South Africa, it being fitted with two pairs of high pressure cylinders in place of one pair high and one pair low; the weights on the coupled wheels were reduced to a maximum of ten tons per axle, to enable the engine to be worked over sections of the line laid with 45lb. rails; and a superheater of the Schmidt type has been fitted. Early in 1911, two heavy passenger tender engines, of the 4—8—2 type, designed by the late Chief Locomotive Superintendent of the Cape Government Railways, were built by the North British Locomotive Company and erected at Salt River; they have since been working successfully on the mail service between Capetown and Touws River, and have materially reduced the number of double-headed trains running on that section as a result of their enhanced tractive effort. So far as it comes within the scope of this department, a careful watch has been kept upon the working of the Mallet type locomotives in the Transvaal and Natal Provinces; in the former they are employed as open line engines working coal traffic on the Witbank-Germiston section, and in the latter, purely as "bankers" on heavy gradients; but, until the time comes for them to be brought into the workshops for a thorough overhaul, and the wear and tear, cost of repairs, etc., can be compared with those of other classes of engines which have dealt with an equal or proportional amount of haulage, a comparison would be premature. A considerable number of experiments have been made in connection with the petrol driven rail motor-coaches, in particular the Leyland-Thomas petrol electric bogie car; but, as the mileage run by this vehicle up to the present is inconsiderable, it is too early yet to make any definite statements as to its practicability in actual everyday working. The system of power transmission has, so far, given good results, but is of an intricate and complicated nature, provision having had to be made in the driving shaft by means of universal joints to meet the lateral and radiating action of the bogies, and from the examination of this car I am of opinion that the upkeep of same will be a heavy item.

When Mr. James Swinburne talked to the Institution of Electrical Engineers, on December 4th, 1902, about the Presidential Address which he had written, he related that, wishing to find out what entropy was, he asked Lord Kelvin. The reply was, "Well, entropy is a very bad name for it," and that was all Lord Kelvin said about it. In *Engineering* for August 30th of this year, there was published an article entitled "Meta-mechanics; a Plea for Precision." Its general trend is a protest against slackness of definition, especially on the part of those whose duty it is to instruct the rising generation. Such slackness is only too likely to cause a confusion of ideas which is exceedingly difficult to get rid of in after life. Yet the tendency towards slackness is as natural as the confusion to which it gives rise.

INVESTORS' DIARY.

The following company meetings have been announced:—

Jan. 24.—Witbank Colliery.

Finance, Commerce, and Industries.

Marketing Wool.

In his report for 1911, the Trades Commissioner for South Africa in London (Mr. Chiappini) has some interesting observations to offer on the subject of the marketing of wool. He says that the question as to whether growers should sell their wool under their own brands, and if so whether they should ship it to England or sell it at the wool auctions in South Africa, or by private treaty, is a matter of considerable importance to growers and requires careful consideration. Mr. Chiappini remarks that this has always been a contentious matter, and agrees that there is a great deal to be said in favour of each of these methods of sale. He points out, however, a few features regarding this question in connection with which, he says, there can be no difference of opinion. He observes, *inter alia*, that " the best market to sell in is the market where there is the greatest competition, and where the largest numbers of buyers congregate, thus reducing to a minimum the chances of combines being formed against the sellers; and for this reason the establishment of numerous small ' auction wool sales ' at different centres within the Union should be discouraged." From some references which have been made in the daily press regarding these remarks, Mr. Chiappini fears that his recommendations were misunderstood. A careful perusal of the above quotation from his annual report, however, seems to render it clear that he did not recommend the abolition of wool auctions in this country, as could be inferred from the Press references mentioned, but depreciated the establishment of small sales at which competition is limited.

* * * *

Hop Growing.

In connection with the advocacy by the Department of Agriculture of hop-growing in South Africa, it is of interest to note that the British Board of Agriculture return, issued a few weeks back, shows the total estimated yield of this year's hop harvest to be 373,438 cwt., an increase of 45,000 cwt. on last year, the Kentish harvest being 260,410 cwt., an increase of 33,000 cwt. The average yield per acre throughout the country was 10·72 cwt., and in the various counties the average yields were: Hampshire, 12·19; Kent, 12·17; Sussex, 11·99; Surrey, 10·26; Worcestershire, 7·81; Gloucestershire and Shropshire, 6·49; and Herefordshire, 5·62. The average yield for the country is four-fifths of a hundredweight above that of last year, and 2 cwt. above the ten years' mean.

* * * *

Cape Wines.

Cape wines are steadily increasing in popularity with the improvement in their quality, a fact which is shown by a study of the figures relative to exports during the last few years. The following statement gives the production and value of wines exported annually since 1907:—

	Gallons.	Value.
1907	16,953	£4,926
1908	26,012	5,556
1909	48,172	9,229
1910	49,471	10,154
1911	67,940	13,865

* * * *

Tobacco Company of Rhodesia.

The report of the Tobacco Company of Rhodesia and South Africa, Ltd., submitted to the meeting on the 20th December last, covers the year ended 30th April, 1912. The accounts show a debit balance of £7,443. This is chiefly accounted for by expenditure incurred at the Salisbury warehouse and at the factory which has been erected at Bulawayo. As the factory was not completed until early this year the revenue derived from the sale of cigarettes and tobacco was consequently very small compared with the expenditure. The new warehouse at Salisbury was completed in May last, and the amount of leaf of the 1911-12 crop to be graded will amount to over double the quantity handled last year. The management expenses will remain the same. It is anticipated, therefore, that the receipts will more than balance the working expenses. The weight of leaf of the 1911-12 crop received at the warehouse to the middle of November was 1,594,166 lbs., as compared with a total of 543,686 lbs. for the previous year. As stated in the interim report issued to shareholders on 18th May last, the 1911 crop of leaf sold by auction in January last aggregated 446,000 lbs., as compared with some 150,000 lbs. the previous year. The 1912 crop now being manipulated will, it is expected, be ready for auction in February next, and it is anticipated that over 1,000,000 lbs. of leaf will be offered for sale. Mr. W. P. Moore, the local director and general manager in South Africa, came to London in July last to confer with the Board on certain important points, and the general policy and conduct of the company's affairs for the future were fully discussed.

* * * *

African Banking Corporation.

Cable advice has been received by the General Manager of the African Banking Corporation, Ltd., to the effect that the directors propose to recommend to shareholders at the forthcoming yearly meeting the payment of a dividend at the rate of 8 per cent. per annum for the six months ended September 30 last, making, with the interim dividend of 6 per cent. paid in July last, a dividend of 7 per cent. for the year. It is further proposed to place £25,000 to the reserve fund and carry £2,500 to the staff guarantee and savings fund, leaving £17,750 to be carried forward to next account.

You will notice that all the Great New Mills in South Africa employ

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Robinson. Modder B. Bantjes. Van Ryn Deep.

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What We Could but Don't Produce.

We have received from the Industries Section of the Department of Customs and Excise the November statement of certain articles imported into the Union which it is considered are capable of being produced or manufactured within the country. The articles in question and their value are as follow:—

	Quantity.	Value.
Chicory (lbs.)	312,709	£3,259
Corn, Grain and Meal—		
Barley (lbs.)	270	2
Beans and peas (lbs.)	629,475	3,490
Malt (lbs.)	1,955,702	14,545
Wheat (lbs.)	4,315,250	15,846
Flour, wheaten (lbs.)	6,071,965	28,739
Fruit—		
Dried (lbs.)	853,732	14,474
Bottled, tinned, etc. (lbs.)	85,688	2,000
Sugar and sugar products (lbs.)	7,042,402	49,271
Tea (lbs.)	566,148	27,882
Vegetables—		
Onions (lbs.)	98,427	355
Potatoes (lbs.)	2,729,410	8,416
Dairy products—		
Butter (lbs.)	940,655	49,444
Butter substitutes	181,130	5,819
Cheese (lbs.)	429,075	13,116
Milk (lbs.)	1,952,356	39,587
General farm produce—		
Eggs, fresh (number)	36	—
Hams and bacon (lbs.)	594,017	24,788
Lard (lbs.)	208,573	4,887
Meats, frozen—		
Beef (lbs.)	1,012,639	9,225
Mutton (lbs.)	322,462	4,197
Meats, salted or cured—		
N.O.D. (lbs.)	21,400	552
Meats, preserved (lbs.)	215,930	9,813
Miscellaneous articles of food and drink—		
Aerated waters	—	2,004
Biscuits (lbs.)	216,983	6,649
Cakes (lbs.)	35,203	1,393
Confectionery (lbs.)	821,919	34,565
Jams and jellies (lbs.)	127,754	2,821
Pickles and sauces (lbs.)	153,035	4,877
Salt, common and table (lbs.)	1,481,348	1,393
Vinegar (gallons)	15,496	1,534
Total articles of food and drink, as above	—	384,923
Miscellaneous articles, not food and drink—		
Acetic acid (gallons)	20	5
Candles (lbs.)	91,919	1,315
Cement (lbs.)	18,143,600	11,802
Coke and patent fuel (tons of 2,000 lbs.)	396	466
Earthenware, inc. bricks	—	18,422
Furniture	—	70,568
Leather—		
Saddlery and harness	—	7,666
Manufactures, n.o.d.	—	15,015
Unmanufactured (lbs.)	205,482	15,597
Oils—		
Castor (gallons)	9,720	1,568
Linseed (gallons)	44,362	5,830
Rope and cordage (cwts)	2,554	5,182
Soap, common (lbs.)	601,117	5,294
Stone, marble and slate, for building	—	3,147
Tobacco—		
Unmanufactured (lbs.)	55,321	2,900
Cigars (lbs.)	16,261	9,335
Cigarettes (lbs.)	31,683	8,751
Manufactured (lbs.)	3,738	583
Vehicles—		
Carts, carriages, wagons and parts, not motor	—	6,171
Total miscellaneous, as above	—	189,717
Grand total	—	574,640

* * * *

New Durban Coaling Appliances.

A joint meeting of the Port Advisory Board and representatives of the Natal Coal Owners' Association was held last week, for the purpose of considering various schemes of proposed extension of the coaling appliances at the Bluff. It will be remembered that Parliament has already made financial provision for the erection of additional appliances at the port, and the railway authorities have been engaged for some time back in considering the most desirable scheme to adopt, whilst the members of the Coal Owners' Association have from time to time had interviews with the Administration on the matter, and the various schemes suggested have also been submitted to the Port Advisory Board for their consideration and advice. A scheme had been devised which provided for new dumpers, which would feed by means of two belt leaders, which would discharge coal into ships at the rate of 600 tons per hour; but the question was recently raised as to the desirability of at the same time extending the quay at the Bluff, with the result that an alternative scheme was drawn up which also provided for the extension of the wharf by about 600 feet. In the end it was unanimously decided to recommend the " A " scheme to Government. It may be added that it is understood that this scheme will be put in hand almost immediately. The new appliances, as shown by plans put before the meeting, will be laid down on the wharf immediately alongside the present coaling machinery, and the new transporters—or belt-leaders, to give them their proper name—will run on a continuation of the lines now used for the present transporters, and it will be possible for one of these and one of the new belt-leaders to be simultaneously at work on the same vessel coaling at different hatches. In some respects the new appliances will be more complicated than those now at present in use, but at the same time they will lead to considerable simplification of the work of handling the coal, for it will pass quite automatically from the dumper through the belt-conveyor into the ship's hold or bunkers, and there will be no question of buckets to be shunted from the dumper to the transporter, then hauled up and run out over the ship and discharged. Over the length of wharf where this appliance will work, a gantry will be erected, in the centre of which there will be a small bin. From the dumper to this bin an endless belt-conveyor will run, which will bring the coal up from there, and from the bin, by means of other belt-conveyors, it can be conveyed along the gantry to the belt-loaders, or transporters, on which there are also belt-conveyors. The coal is automatically tipped from one belt into the other, and runs out through the belt-loader over the hatch of the vessel, and passes down a chute into the hold or bunker. It will thus be seen that the apparatus required is of a more novel and complicated character than that provided at present, but it gets over sundry of the difficulties which at present arise in the handling of the coal, and presumably does not require as large a staff as do the present appliances. The opinion seemed to be at the meeting that though it was not absolutely certain that it was the best scheme that could be possibly adopted, it had the merit of one that could be got on with at once, and that, such being the case, it was decided it should be put in hand forthwith.

* * * *

The *Pretoria News* states that Mr. P. Paterson, who was for some years Claims Inspector in Pretoria, has had his invention for the automatic prevention of collisions tested on the County Down Railways in Ireland, and that the trial has proved a great success. The invention is described as an electrical contrivance, which absolutely prevents two trains coming into the same section, and renders collisions impossible.

TO CONTRIBUTORS.

The Editor invites Contributions on any subject of interest relating to mining and other industries of South and Central Africa, as also of suitable non-copyright photographs or snapshots of mining or engineering interest. Subject to special arrangement, the scale of remuneration for all articles inserted is at the rate of Two Guineas per page, and 5/- for every photograph. No responsibility can be accepted for safe transmission, but anything that may be submitted that is not accepted will be returned if a stamped and directed envelope is enclosed for the purpose.

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Automobile Notes.

Greetings.

To all motorists and traders engaged in the automobile industry through the sub-continent, we extend greetings, and—in the words of a great poet:—"What is best, that best we wish thee" in the year just entered upon.

Retrospect.

The year 1912 has been one of great importance to the South African motor industry, and it is expected, when complete returns of the imports of automobiles and accessories are available, an enormous increase on the trade in previous years will be revealed. To facilitate this extensive motor movement several new garages have sprung into existence, and other have undergone needed improvement, until to-day the premises licensed in Johannesburg as motor depôts are numbered in the region of two score. In the commercial capital also, according to statistics, over 1,000 private motor vehicles were licensed during the year within the municipal area; separate records being made of the licenses of a special nature granted to garages. In addition, almost 1,500 motor cyclists applied for licences and from all accounts this number will in time be considerably increased, as a goodly proportion of the 23,650 pedal-bicycle users registered in Johannesburg is enticed into the motor cyclist ranks. Many in the latter category, in turn, will pass into a stage nearer the automobile as they become enamoured with the cycle car. These approximate figures are merely quoted in support of the great strides of the industry locally, as evidenced by the adherents to the automobile pursuit.

The prices in regard to the majority of cars have not been reduced in 1912, a fact which constitutes a feature of more interest to the motorist than any reference to the many improvements effected in design during the year. The reports of the recent Olympia Show are still fresh in the memory of all motorists, and a repetition of the trend of design, etc., would serve little purpose here. What has appealed greatly to the man in the street, however, has been the perfection to which the coach-builder's art, in motor bodies, has attained to. It is hoped that the year 1913 will witness less of the imported body-work on cars, and South African workmanship in this direction given a chance to further establish its reputation for excellence.

The road systems of the country have been characterised by general progress, many miles of new construction work being undertaken in the period under review, and the heavy task of maintenance performed in gratifying manner. Superfluous to add, much remains to be accomplished in regard to new work and renovation of roads. The main roads of the Transvaal have come in for a fair share of criticism during the year, and the treatment adopted by those responsible has certainly fallen far short when comparisons are made with roads in countries of an older civilization. It may be remarked that there exists among many motorists altogether vague notions as to which body controls certain sections of roadway in the Transvaal, and where, for example, the

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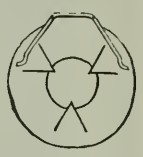
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P.W.D. responsibilities begin and end, and similarly municipalities, etc. Where doubts exist in this wise application should be made to the Transvaal Automobile Club, who will be pleased to furnish particulars in regard to provincial and other roads.

The solving of the dust problem has focussed attention throughout the year, and splendid results have attended several of the preparations employed to this end. Tar, in particular, has been highly satisfactory, whether used as a dressing for laying dust or surface maintenance, or as a binder in the work of construction and re-metalling.

A gratifying increase in the T.A.C. membership has taken place in the past year. One must conclude, however, that were the many facilities which indentification with the club embraces accorded suitable recognition, the numbers would be supplemented considerably. The good roads movement has always engaged the attention of the committee, and indefatigable secretaries in addition to the protection of the interests of motorists and the furtherance of the pursuit to which they are patrons. The erection of sign-posts at the various cross roads has been on innovation much appreciated, and for which the thanks of the motoring public, *inter alia*, are due to the club.

Traffic regulations still savour of much that is primitive, though it is anticipated that the motor legislation, now impending, will bring these into line, so to speak, to conform to modern street conditions. The carelessness of the coloured driver is to be deplored, and it would appear that nothing short of drastic measures will impress this class of their responsibility. Considering the many danger points which the planning of streets at right angles occasion, few collisions of serious nature have been reported in Johannesburg during 1912. Were the authorities to exercise their power, however, it must be admitted that large number of motorists who fail to slow down in the necessary manner at these danger points would be arraigned for driving to the public danger.

Occasionally letters are received from satisfied readers of these "notes," and are welcomed, but the infrequency of those containing criticisms is regretted, these being in the end more useful than any penned from the standpoint of commendation. It may be mentioned that criticism will always be received in the spirit in which it is intended, and impressions to the contrary we hope do not exist. As the aim of this section of the journal is to make the motor news it contains as interesting and helpful as possible to all readers. Any notification of failure in this respect or suggestions towards improvement, will be deemed a favour by the writer of these columns.

Here and There.

The remarkable absence of serious accident during the holiday season in Johannesburg, attributable to the automobile, reflects a competence in the general management of this machine which is not always sufficiently recognised. The tendency to regard motorists as an inconsiderate body of road users is only too common among certain sections of the community, hence this reference to the gratifying clean holiday sheet, and having regard to the fact that the axiom: "Honour to whom honour is due," is singularly more apparent in the breach than the observance, where motorists are concerned.

* * * *

A feature which might be introduced to the curriculum in local schools, with advantage, is one endorsed by many school authorities in other parts who instruct children of the risks which are run in the streets. The traffic conditions in Johannesburg differ greatly from those obtaining in England, but contain, nevertheless, peculiar elements of danger which are already well-known and require guarding against. Very salutary effects result, the action of the authorities referred

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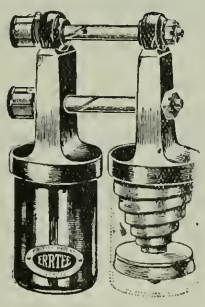

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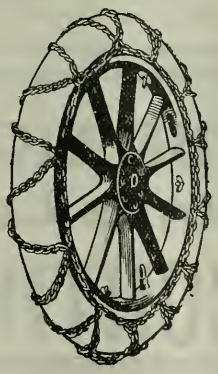

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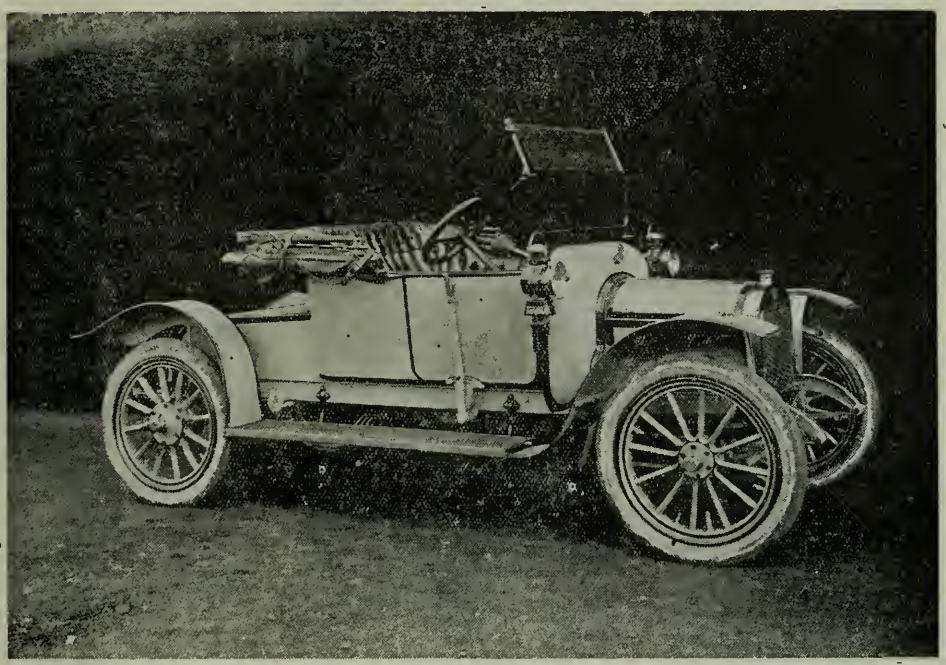

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to in the adoption of bold drawings indicating to the pupils in unmistakable fashion how easily street accidents happen. The attractive colour prints employed in instances show the danger of hanging on the back of vehicles, and emerging from them in crowded thoroughfares, in a way which cannot fail to impress as intended.

* * * *

Of the many trans-Atlantic manufacturers who aim at cheapening as well as perfecting the automobile, the Studebaker Corporation evidently take a leading position, and already have secured a large share of the world's trade. The South African representatives emphasize the undoubted value for money which is presented in the " Flanders " and the sister car, the " E.M.F.," and that the public are not slow to realise this fact is apparent by the number of bespoke orders received for these machines.

* * * *

A new paraffin vaporiser, which effects an enormous fuel economy is at present being used for commercial vehicles, and also for pleasure cars to a great extent, in the United Kingdom, proving conclusively that paraffin of the crudest kind can be used with satisfactory results for all types of motor vehicles. The difficulties of the paraffin carburettor in regard to carbonisation, smoke and smell, it is claimed by the makers of the new vaporised, have been successfully overcome, the operation of the C.G. device—as it is styled—being practical in the highest degree.

The excellence of the Vauxhall hardening process has long been recognised by automobile engineers, and material of similar classification. A crown wheel and bevel wheel, which the writer had opportunity of inspecting, bears out the truth of this statement, seeing that these particular parts showed no sign whatever of wear, notwithstanding being in constant use on South African roads for several years.

New Patents.

615. Alfred Argles.—Improved amalgamation process.
616. Kenneth W. Greenen.—Automatic adjuster for conveying belts and the like.
617. Frank Robert McBerty.—Machine telephone switching system, E.1.
618. Frank Robert McBerty.—Machine telephone switching system, E.2.
619. John Mann.—Gas flash boiler heater.
620. Edward Thurlow.—An improved composition for inflating the inner tube of motor tyres and rendering same immune to deflation.
621. Frederick Charles Worman.—Improved jumper and bit and the like.
622. Andrew Baillie.—An improved spraying device for allaying dust in mines and the like.
623. Allan Howie and Albert Crewe.—Improvements in signalling and/or controlling devices for hoists and the like.
624. James Wood and Otto Gustav Heinrich Moll.—Improvements in rock drills.
625. Joseph Teague.—Improvements in means for lighting blasting fuses.
626. Henry Robertson Lawson and John Fred Billings Garratt.—Improvements in assay furnaces.
627. Bernhard Benedix.—A new and improved fatty saponaceous product and method of manufacturing same.
628. Carl Westphal.—Improved pipe joint.

The Week's Company Meetings.

VEREENIGING ESTATES.

Annual Meeting.

The annual general meeting of shareholders of Vereeniging Estates, Ltd., was held on Dec. 28 in the board-room, Lewis and Marks Building, President Street. Mr. J. Emrys Evans presided, and there were also present Messrs. Isaac Lewis, George Falcke, L. Marks, G. D. Massey, A. D. Owen, R. W. Townsend, S. Marcus, and W. Mallinson, secretary, representing 429,927 shares out of an issue of 730,580.

Chairman's Speech.

The Chairman, in moving the adoption of the report and financial statement, said: Before dealing with the accounts I must express the deep regret of your board at the tragic death of Mr. Arthur C. Mallinson in September last. By his death your directors lost a valued friend and colleague and the company a zealous worker. The gross departmental profits exhibited by the profit and loss account amount to £16,459 2s. 5d.—a decrease of £2.896 13s. 1d. as compared with the results of the previous year. This decrease, as you will observe on reference to the accounts, is due to the diminution of the profits on coal winning. One factor which militated against low working costs was the inrush of water during November last year, which had the effect of cutting off access to a large number of working faces for several months. The profits on coal winning were also to some extent reduced by the alteration in the railway rates affecting the carriage of coal which came into operation on the 1st of August last. The reduced tariff gave Natal collieries a considerable advantage in competing for the Orange Free State and Southern trade. Representations were made to the Railway Administration, with the result that the hardships complained of were ameliorated though not adequately removed.

FARMING OPERATIONS.

The other items on the revenue side show increases, and it is satisfactory to record that the profit on farming operations shows an advance of £3,784 15s. 3d. over the results of the previous year. This is a notable advance when it is borne in mind that the season was not propitious, for though the rainfall was not far short of normal, ploughing operations were greatly retarded, and consequently restricted, owing to the shortage of rain experienced during the months of October, December, and January, when it is most needed to permit of ploughing and for germination. Certain of the company's stands in the township of Vereeniging have been sold at very satisfactory prices during the year. The amounts realised show a considerable profit on the price at which the stands are in the company's books, but this profit has not been taken into account in the profit and loss account. A further undisclosed profit is represented by the interest due on the company's holding of preference shares in the Victoria Falls and Transvaal Power Company. This company is now, I understand, doing exceedingly well and is earning satisfactory profits, and there is every reason to believe from the information given to me that we shall shortly be receiving a full twelve months' interest on our 150,000 preference shares. If these items had been included on the credit side of the profit and loss account they would have materially altered the position shown therein, but your directors considered it wise to act conservatively in the matter and to await the actual receipt of the amount before crediting to profit and loss account.

Turning to the other side of the profit and loss account you will observe a decrease in directors' and auditors' fees, Johannesburg and London office expenses and general charges at Vereeniging. The item business management will not appear in future accounts. The total loss for the year as shown by the profit and loss account No. 2 is £17,206 3s. 6d. This includes a charge of £3,500, being 20 per cent. of the discount on the sale of the £350,000 debentures placed during the year at 95 per cent. The position shown by the balance sheet I think requires no further explanation from me. I might mention, however, that the 20,000 ordinary shares in the Victoria Falls and Transvaal Power Company are included in the balance sheet at a nominal figure only, though, as you are aware, these are to-day an asset of a valuable nature.

COLLIERIES.

After prolonged negotiations your directors are pleased to inform you that an agreement has now been entered into with the Transvaal Coal Owners' Association for a period of five years from June next for the sale of part of our coal through that Agency, on what we consider are very satisfactory terms. The net result of our arrangements with this Agency and with the Victoria Falls Power Company is that as soon as the agreements come into force we shall have an assured sale of at least 40,000 tons per month at a guaranteed minimum profit of 1s. per ton. In order to meet these requirements and at the same time leave an ample margin for the supply of our other customers, the Cornelia Colliery has been equipped for a minimum output of 30,000 tons per month, and a new coalfield, to which I refer later, is being opened up. Four districts are being opened up, each of which will provide an output of about 500 tons daily. Three of these will be worked to provide the output, and the fourth will be kept in reserve ready to resume work at short notice. Boreholes have proved the existence of a large area of workable coal in the west district, which has been standing for some time.

NEW PIT SINKING.

In addition to equipping the Cornelia Colliery as described, it has been decided to sink new pits on the north bank of the Vaal River in close proximity to the power station and to drive under the river to the Maccauvlei coalfield which has been proved by boreholes to contain coal of good quality and thickness. Coal from these pits can be delivered into the bunkers of the power station by the company's own locomotive, and thus effect a saving in the cost of coal to the power company by the amount of railage from Viljoen's Drift to Vereeniging. When the coal is reached, main roads will be commenced and driven at a depth of 150 feet below the surface, or about 100 feet beneath the bed of the river. This depth is expected to give ample security against any inrush of water from the river. Though it is anticipated that a considerable quantity of coal will be derived from the north side of the river, the real object of the colliery is to win coal on the Orange Free State side from the Maccauvlei coalfield, which is practically unlimited in extent. The new colliery is expected to be producing coal in quantity by the middle of next year and to be in full work in twelve months.

VEREENIGING BRICK AND TILE.

No capital expenditure has been incurred during the year by this company, which has reduced its indebtedness to the parent company by the sum of £5,000. Steady progress continues to be made, and the demand for the company's products is maintained. From the directors' report you will see that a number of erven in the township was disposed of that substantial buildings have been erected on most of these. This building activity has naturally added to the company's sales of bricks. The trade in roofing tiles is being actively developed, and the company succeeded in securing, among other orders, those for the tiles utilised in roofing the Union Buildings and the new railway station in Pretoria, and also the German Church at Johannesburg. Farmers do not yet sufficiently appreciate the advantage to be derived from the use of earthenware pipes for the conveyance of water for irrigation purposes. The dry season through which we have passed will no doubt teach its lesson and should result in the profitable sale of large quantities of these pipes in stock.

ESTATE FARMING OPERATIONS.

I have already referred to the profits from farming. A large amount of development work has been accomplished in all branches, the benefit of one of which will only be apparent as time goes on. As in the past the chief revenue has been derived from maize cultivation on the estate. The results obtained from lucerne growing have not come up to expectation owing almost entirely to the inadequacy of the water delivered for irrigation purposes, particularly at Bankfontein, where operations have been hampered by the extremely low level of the river during the recent drought. Your general manager has under consideration the most efficient and economic scheme for increasing the water supply. To yield the best returns the lucerne lands must be brought into a high state of tilth and carefully reworked and levelled, a process which, in view of the large area under this crop, must of necessity take a long time. The fact has been amply demonstrated that lucerne can be grown successfully on your estate, and large profits are confidently expected from our lucerne stands in future. Considering the almost unprecedented drought we have experienced, the estate cattle are in excellent condition, and the herds will undoubtedly be much improved by the pedigree bulls imported. A small profit is shown by the horse ranch. A nice lot of young horses are coming on and the estate manager hopes to increase materially the profits of this branch. The process of improving the flocks of sheep in wool, frame and constitution by the importation of high-class stud rams, has been continued, and there was a marked advance in the prices obtained from the last clip of wool. The losses of sheep in the north of the Cape Colony and in the Orange Free State,

occasioned by drought, have been considerable, but I am glad to say, in contrast to this, we have had a good sheep year, owing to your possessing excellent pasturage on the Vaal River, to which your sheep can always be moved.

MACCAUVLEI PLANTATIONS.

The value at which the forests figured in the accounts at the end of the year was £48,831 2s. 10d., which represents the cost of planting and maintenance. The forest trees now number close on four million, and with the exception of a quantity of quick-growing eucalyptus trees, planted within the past two years, the entire plantations consist of oaks and various kinds of useful pines. The plantations were started about eighteen years ago, so that the circumference of the older trees is now such that quantities of mine tubs have been built of planks sawn from them; and the requirements of the Cornelia Colliery in mine props and sleeper timber are also supplied from Maccauvlei. A large proportion of the older trees are to-day undoubtedly worth more than 10s. each. The directors' report advises that the plantations have been insured at a nominal figure of £85,000, but as you will readily understand this does not even approximately represent the value of the trees. You will recognise that the selling price of trees naturally appreciates in ratio to their age. The orchards are doing very well indeed, and revenue continues to be derived from the sale of fruit, principally apples.

UNION STEEL CORPORATION.

This corporation has now started the buildings of its works on the property, and we understand that it will be in a position to start production within the next six months. Your company has given it every assistance in the selection of the most suitable site for its operations, and in its other preliminary work, and there is little doubt that this company will be followed by many others which cannot fail to recognise the unequalled opportunities our property affords for the establishment of new industries in view of the close vicinity of coal, water and electric power.

VEREENIGING TOWNSHIP.

More than one reference has been made to the sale of stands in the township. The prices realised have been very satisfactory. The establishment of the power station and the works of the Union Steel Corporation at Vereeniging has been the means of directing attention to the township, which has assumed a more prosperous and busy appearance. I have no doubt that other industries will be induced to erect their works at this centre, which offers such excellent facilities. Vereeniging, with its fine expanse of river surface, its proximity to Johannesburg and the Reef, from which it is easily accessible owing to a convenient railway service, is an ideal pleasure resort, and I hope at no distant date that the company, or a subsidiary company, will take in hand the erection of a modern commodious hotel for the accommodation of visitors, and will provide for them golf links, tennis cours, boating and other forms of recreation, which will render the spot more popular. Such an establishment would confer a boon on those who cannot spare the time to go to the Coast, and I have not the least doubt but that it would pay handsomely.

Before concluding, I must place on record the Board's appreciation of the good services rendered by Mr. Isaac Hodges, the general manager of the company, and by the other members of the staff, all of whom have worked loyally in the interests of the company. I now beg to move the adoption of the directors' report and the accounts.

The report and accounts were adopted.

The meeting confirmed the appointment of Mr. Louis Marks as a director, and the retiring directors, Messrs. Isaac Lewis and Samuel Marks, were re-elected.

Messrs. Alex. Aiken and Carter were reappointed auditors.

O.F.S. AND TRANSVAAL DIAMOND MINES.

Annual Meeting.

The annual general meeting of the Orange Free State and Transvaal Diamond Mines Company, Ltd., was held at the transfer office, Mayfair, last week, under the chairmanship of Sir J. Langerman, M.L.A. The Chairman, in moving the adoption of the report and statement of accounts for the year ended the 31st of October, 1912, said: At previous meetings of the company I explained that the directors held the opinion that if sufficient money could be obtained to develop the mine at greater depth, it would be advisable to mine and floor about a million loads of blue ground drawn from all parts of the mine, and, after allowing the ground to thoroughly pulverise, to start washing operations on a large scale, so that the mine should undergo a thorough test as to its true value. A scheme to raise £100,000 by the issue of debentures was submitted to shareholders, and at our last meeting you were advised that, notwithstanding Sir Joseph Robinson's offer to take up one-half of the debentures provided the shareholders subscribed the other half, the appeal to shareholders had not met with adequate response, and the proposed issue had in consequence to be withdrawn. This the directors regretted, because they felt confident that if shareholders has assisted them to carry through the scheme the property could have been made a paying proposition in view of the valuable nature of the diamonds found in the mine. I also told you that, as the efforts of the directors to raise the money had failed, nothing further could be done for the present towards carrying out the work proposed by the directors; consequently no work has been done in the mine during the past year, but prospecting is being carried on on your property—which, as you know, consists of three thousand and fifty acres of freehold land—and also on areas adjoining your property. The directors will, however, make another effort to obtain the requisite sum to carry out their ideas, especially as Sir Joseph Robinson is still ready and willing to provide one-half of the amount required. The buildings, machinery and plant on the property have been maintained in good order, and the cash in hand amounts to £2,461 1s. 10d.

The report was adopted.

The appointment of Mr. C. A. Ferguson as a director was confirmed.

Mr. S. Fleischer and Messrs. C. L. Andersson and Co. were reappointed as auditors for the ensuing year.

All the directors, being eligible for re-election, were re-elected.

KAALFONTEIN DIAMONDS.

Annual Meeting.

The ordinary general meeting of shareholders of Kaalfontein Diamonds, Ltd., was held last week in the company's office, Exploration Buildings. Colonel Donaldson presided.

The Chairman, in moving the adoption of the report and accounts, said: Accounts are now presented to you for the year ended the 30th of June, 1912. The capital remains unchanged at £29,000. During the year your farm has been bonded to the extent of £750 in order to raise funds for the purchase of 3,486 Madagascar Oil Development shares. With this exception your assets remain unchanged from last year. Your available cash balance on the 30th of June was £340 11s. 4d. Your income for the year amounted to £54 1s. 8d., and your expenditure to £235 14s., for interest, secretarial remuneration and other charges; the result being a loss of £181 12s. 4d.

The report and accounts were adopted.

The retiring directors, Messrs. E. J. Sievwright and M. F. Head, were re-elected, and Mr. J. H. Vining was reappointed auditor.

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Single Cylinder Boiler Feed Pump.

The Langlaagte Estate and Gold Mining Company, Limited.

(INCORPORATED IN THE TRANSVAAL.)

Declaration of Dividend, No. 45.

NOTICE IS HEREBY GIVEN that the Directors of this Company have declared a Dividend at the rate of (20) Twenty per cent. per annum for the six months ending 31st inst. (Two Shillings per share), payable to Shareholders registered on that date.

Dividend Warrants will be issued to South African Shareholders from the Head Transfer Office (P.O. Box 1040), Johannesburg, and to European Shareholders from the London Transfer Agency, 30 and 31, St. Swithins Lane, London, E.C., on or about the 10th February, 1913.

Dividend on Bearer Shares.—Coupon No. 34.

Holders of Share Warrants to Bearer are hereby notified that they will receive payment of the Dividend on presentation of Coupon No. 34, which is payable at the London Transfer Agency of the Company as above, or negotiable with their Paris correspondents, Messrs. Clark and Hattensaur, 46, Rue de Provence, Paris, on or about the 10th February, 1913.

Coupons must be left four clear days for examination.

The Transfer Books will be closed from the 1st to the 7th proximo, both days inclusive.

By Order,

J. H. TILEY,
Transfer Secretary.

Head Transfer Office,
Robinson Group of Companies,
Johannesburg, 21st December, 1912. 52184

The Randfontein Estates Gold Mining Co., Witwatersrand, Limited.

(INCORPORATED IN THE TRANSVAAL.)

Declaration of Dividend.

NOTICE IS HEREBY GIVEN that the Directors of this Company have declared a dividend of 5 per cent. (Five per cent.), payable to Shareholders registered on the 31st December, 1912.

Dividend Warrants will be posted to South African Shareholders from the Head Transfer Office (P.O. Box 1040), Johannesburg, and to European Shareholders from the London Transfer Agency, 30 and 31, St. Swithin's Lane, London, E.C., on or about the 10th March, 1913.

Dividend on Bearer Shares.—Holders of Share Warrants to Bearer are hereby notified that they will receive payment of the Dividend on presentation of Coupon No. 1, which is payable at the London Transfer Agency of the Company as above, or negotiable with their Paris correspondents, Messrs. Clark and Hattensaur, 46, Rue de Provence, Paris, on or about the 10th March next.

Coupons must be left four clear days for examination.

The Transfer Books will be closed from the 1st to the 7th proximo, both days inclusive.

By Order,

J. H. TILEY,
Transfer Secretary.

Head Transfer Office,
Robinson Group of Companies,
Robinson Buildings,
Johannesburg, December 21st, 1912. 52185

The Randfontein Central Gold Mining Company, Limited.

(INCORPORATED IN THE TRANSVAAL.)

Declaration of Dividend.

NOTICE IS HEREBY GIVEN that the Directors of this Company have declared a dividend of 5 per cent. (Five per cent.), payable to Shareholders registered on the 31st December, 1912.

Dividend Warrants will be posted to South African Shareholders from the Head Transfer Office (P.O. Box 1040), Johannesburg, and to European Shareholders from the London Transfer Agency, 30 and 31, St. Swithin's Lane, London, E.C., on or about the 24th February, 1913.

Dividend on Bearer Shares.—Holders of Share Warrants to Bearer are hereby notified that they will receive payment of the Dividend on presentation of Coupon No. 1, which is payable at the London Transfer Agency of the Company as above, or negotiable with their Paris correspondents, Messrs. Clark and Hattensaur, 46, Rue de Provence, Paris, on or about the 24th February next.

Coupons must be left four clear days for examination.

The Transfer Books will be closed from the 1st to the 7th proximo, both days inclusive.

By Order,

J. H. TILEY,
Transfer Secretary.

Head Transfer Office,
Robinson Group of Companies,
Robinson Buildings,
Johannesburg, December 21st, 1912. 52186

Notice to Owners and Users of Machinery.

OFFICIAL STATISTICAL RETURNS.

IN terms of the Mines, Works, and Machinery Regulations Nos. 138 and 179, framed under Act No. 12 of 1911, owners and users of machinery are hereby called upon to furnish a return of all machinery erected or in use as at the 31st of December, 1912.

The forms prescribed for this purpose are obtainable gratis on application to the Office of the Government Mining Engineer, P.O. Box 1132, Johannesburg, or Room 44, New Law Courts Buildings.

This return must be rendered on or before the 25th of January, 1913.

The definition of the word "machinery" is as follows:—

"Machinery" shall mean and include stationary and portable boilers, steam apparatus, steam and other engines, including locomotives, and all appliances or combinations of appliances which can be used for developing, receiving, transmitting, or converting either mechanical or natural power, but shall not include any locomotives owned or used by the Department of Railways and Harbours.

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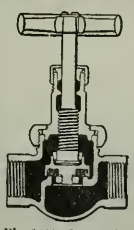

Fig. 1408—Screwed Ends.
Fig. 1409—Flanged.

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Fig. 1771—As above.
Fig. 1770—Flanged.
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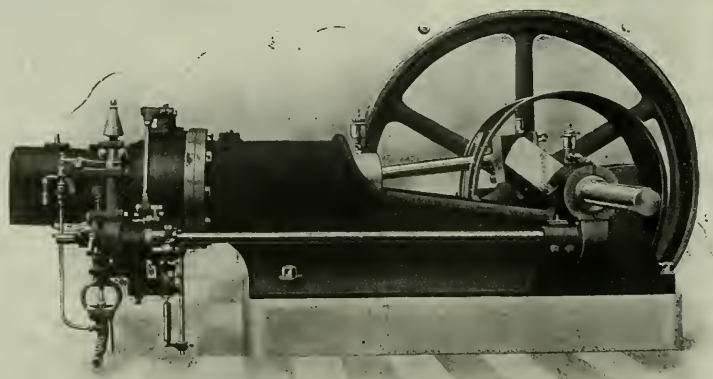

Photograph of Oil Engine (New Model) 3½ to 20 B.H.P.

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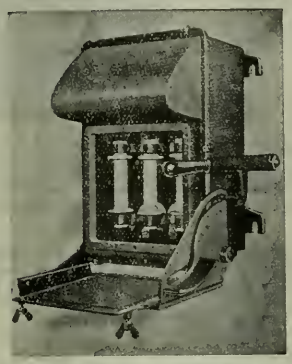

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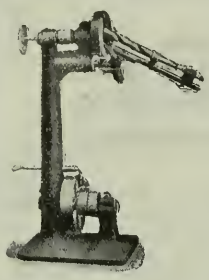

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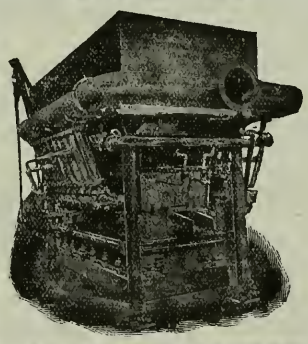

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The Vereeniging Estates, Limited.

(Incorporated in The Transvaal.)

Report of the Directors.

Submitted at the Fourteenth Ordinary General Meeting of Shareholders, held at Lewis and Marks Building, Johannesburg, on Saturday, the 28th day of December, 1912, at 12 o'clock noon.

To the Shareholders,—

Your Directors beg to submit their Fourteenth Annual Report and Audited Statements of Account for the year ended 30th September, 1912.

CAPITAL.

There has been no alteration in the Share Capital of the Company. The authorised Capital is £1,000,000, divided into 1,000,000 Shares of £1 each, of which 730,580 are registered and issued.

DEBENTURES.

The Debentures to the amount of £350,000, mentioned in the last report, have been issued and taken up at a discount of 5 per cent.

PROPERTY.

During the year under review the Company purchased the surface rights of the Farm Waagstuk No. 509, in the district of Heilbron, 1,156 acres in extent. The total area owned by your Company now comprises 127,386 acres, of which 46,561 acres are situated in the Transvaal and 80,825 acres in the Orange Free State.

Reference to your holding of erven in the Township of Vereeniging is made elsewhere in this report.

COLLIERIES.

The saleable output of coal produced was 313,724 tons, as compared with 300,351 tons for the year preceding.

Cornelia Colliery.—The equipment of this Colliery has been thoroughly overhauled and augmented. Improvements have been effected at the shaft bottom and gravitation sidings have been put in, which permit of the handling of a considerably larger output than has hitherto been possible. The main haulage roads have been extended, and the light rails taken up and replaced by a double track of 24lb. rails throughout. The maintenance to the haulage roads will thus be reduced to a minimum in the future, and the doubling of the track naturally tends to greater facility and celerity in the handling of the output. The battery of boilers has been added to, with the result that coal can now be consumed for raising steam which formerly was thrown on to the slack heap, consequently there is an augmentation in the quantity of marketable coal. The introduction of coal cutters in the mine is being extended, and their use is proving a most efficient adjunct for increasing the output and reducing the cost of production.

The profit on coal winning, as you will observe, is much less than last year. This is due principally to the cost of overhauling and other non-recurring work, referred to above, being paid for out of revenue and to the decreased selling price of coal disposed of by the Transvaal Coal Owners' Association.

A large proportion of the water is now dealt with electrically, and the General Manager is devising a scheme which will facilitate the handling of the water and at the same time effect economy in pumping.

Camp Pit.—A new Colliery on the North Bank of the Vaal River, in the vicinity of the Power Station of the Victoria Falls and Transvaal Power Company, Limited, and of the works of the Union Steel Corporation (of S.A.), Limited, was started during the year. A substantial brick-lined upcast shaft is completed, and drives from it have been carried North and South to test the area. The coal encountered is of a satisfactory quality, and is being used at the Brick and Tile Works and by other small local consumers. Encouraged by the results obtained, the General Manager was able to decide upon the site of the downcast shaft, the sinking of which is being pressed on.

A large quantity of coal is available on the North Bank of the Vaal River, but eventually it is intended to drive under the bed of the river, with the object of hauling coal from the Free State side. This will obviate the railage from Viljoen's Drift to Vereeniging, a distance of about five miles.

TRANSVAAL COAL OWNERS' ASSOCIATION.

This Company has become a member of the New Transvaal Coal Owners' Association, which commences operations on the 1st July next. The Agreement has not yet been completed, but it is expected that it will be signed before the date of the Annual Meeting of this Company.

VICTORIA FALLS AND TRANSVAAL POWER CO., LTD.

The Power Station started work during the year, and is gradually increasing its supplies of electric current to the Witwatersrand. The coal supplied to it now totals about 500 tons per diem.

UNION STEEL CORPORATION (OF S.A.), LTD.

During the year covered the Agreement beween the Government and the Union Steel Corporation (of S.A.), Ltd., was ratified. The work of erecting the Buildings, Machinery and Plant is progressing steadily, and the Manager of that Company anticipates that within six months the Works will be turning out manufactured steel. The coal use by this concern will further increase our output.

MACCAUVLEI FORESTS.

The Company's plantations have been maintained and considerably added to. The sum expended by this Department during the year was £1,702 3s. 3d., which brings the total costs of the Forests up to £48,831 2s. 10d., at which they figure in your books.

The Directors have adhered to the policy of only debiting to the Plantations Account the actual cost of maintenance and extensions.

Your Directors have been able to effect insurance of the plantations to the extent of £85,000. Hitherto the premium asked for insurance has been prohibitive. Every precaution is taken to safeguard the Forests during the dry season by the burning of fireguards and other means.

THE VEREENIGING ESTATES, LTD.—(*Continued*).

FARMING AND ESTATE OPERATIONS.

The Profit and Loss Account shows that during the year the Estates Department made the substantial profit of £9,788 17s. 8d., as against £6,004 2s. 5d. last year.

The whole of the fencing and other improvements carried out during the year were charged to Revenue.

The Estate cattle are in good condition, despite the severity of the season. Good pedigree bulls were imported, which will greatly improve the strain of the herds.

The sheep are doing well, and are continuously being improved by the introduction of first-class imported rams. During the past year the inferior sheep were culled, fattened on the lucerne lands, and disposed of at very remunerative prices.

VEREENIGING BRICK AND TILE CO., LTD.

This Subsidiary Company continues to make good profits, and has reduced its loan from the Parent Company. Your Directors trust that as Capital Expenditure has now ceased steady progress will be made.

VEREENIGING TOWNSHIP.

Owing to the starting of work by the Power Station, the erection of the Foundry of the Union Steel Corporation and the recognition of the fact that Vereeniging is a unique centre for the establishment of Industries by reason of its geographical position and the plentiful supply of water and cheap fuel, a number of erven in the township have been disposed of at good prices, and a pleasing feature is that substantial buildings have been put up on most of the erven sold. The proceeds of the sales have been carried to a Suspense Account.

DIRECTORATE.

During the past year Mr. C. W. Villiers resigned his seat on the Board, and Mr. Louis Marks was elected a Director in his stead. In accordance with the Articles of Association, two of your Directors, Mr. Isaac Lewis and Mr. Samuel Marks, retire by rotation, but, being eligible, they offer themselves for re-election.

AUDITORS.

Messrs. Alex. Aiken and Carter, your Auditors, likewise retire, but they offer themselves for re-election. You are asked to appoint an Auditor or Auditors for the ensuing year, and to fix the remuneration for the past Audit.

By order of the Board,

WILLIAM MALLINSON,
Secretary.

Vereeniging,
4th December, 1912.

BALANCE SHEET as at 30th September, 1912.

CAPITAL AND LIABILITIES.

Capital—		
Registered £730,580 0 0		
Increase authorised by Resolution of Shareholders 269,420 0 0		
	£1,000,000 0 0	
Issued : 730,580 Shares of £1 each		£730,580 0 0
First Mortgage 5½ Per Cent. Debentures—		
Redeemable at £103 per cent. in 16 equal annual repayments commencing 31st December, 1920.		
Authorised and issued		350,000 0 0
Interest on Debentures Accrued		4,812 10 0
Sundry Creditors and Payments received in advance		7,300 14 6
Vereeniging Erven Sales Suspense Account		2,231 0 1
NOTE.—There is a Contingent Liability of £96 on Shares held in the Witwatersrand Native Labour Association.		
		£1,094,924 4 7

ASSETS.

Farms and Improvements	£475,791 7 5		
Estates Permanent Works	10,400 19 6		
Erven at Vereeniging	75,300 0 0		
Maccauvlei Tree Plantation and Maintenance	48,831 2 10		
Vaal River Weir and Improvements	7,000 0 0		
Orchards, Plantations, etc.	2,504 2 3		
Estates Buildings	26,439 11 11		
		£646,267	3 11
Cornelia Colliery—			
Shafts	8,611 14 11		
Buildings	7,463 9 6		
Machinery and Plant	33,729 8 8		
		49,804	13 1
New Camp Colliery—			
Expenditure to date		10,480	13 7
Property and Stands, Johannesburg		2,215	0 0
Agricultural Implements		4,052	2 4
Furniture		1,697	0 0
Livestock, Vehicles and Harness ...		20,902	16 6
Mine Stores		6,681	8 1
Agricultural Stores and Produce on Hand		7,902	0 11
Share Investments at Cost and under		146,047	1 11
Coal in Transit		159	8 1
Discount on Issue of Debentures ...	17,500 0 0		
Less 20 per cent. Written Off ...	3,500 0 0		
		14,000	0 0
Sundry Debtors and Payments made in Advance—			
Vereeniging Brick and Tile Co., Ltd.	45,566 2 1		
Coal and Sundry	17,748 6 3		
Loans	2,600 0 0		
		65,914	8 4
Bills Receivable		941	12 6
Cash—			
At Bankers	1,851 15 10		
In Hand	192 8 1		
		2,044	3 11
Profit and Loss Account		115,814	11 5
		£1,094,924	4 7

WILLIAM MALLINSON, Secretary.

EMRYS EVANS,
GEO. FALCKE, Directors.

TO THE SHAREHOLDERS.—We report we have examined the above Balance Sheet with the Books and Vouchers of the Company, and have obtained all the information and explanations we have required. In our opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us, and as shown by the Books of the Company.

Vereeniging,
4th December, 1912.

ALEX. AIKEN & CARTER,
Auditors.

THE VEREENIGING ESTATES, LTD.—(*Continued*).

Dr. No. 1 PROFIT and LOSS ACCOUNT for the Year ended 30th September, 1912. Cr.

To Directors' and Auditors' Fees ...	£289 16 0			By Rents and Royalties	£3,170 9 6	
,, Johannesburg and London Office Expenses	1,243 1 3			,, Profit on Coal Mining	3,499 15 3	
,, Business Management	1,300 6 8			,, Profit on Farming Operations ...	9,788 17 8	
,, Legal, Travelling and Sundry Expenses	704 19 6					£16,459 2 5
,, General Charges Vereeniging	3,194 13 8					
,, Discount on Issue of Debentures—20 per cent. written off	3,500 0 0					
,, Trustee Fees	125 0 0					
,, Interest on Loans	5,980 2 7					
,, Interest on Debentures	9,845 7 4					
			26,183 7 0	,. Balance, carried to Profit and Loss Account, No. 2		9,724 4 7
			£26,183 7 0			£26,183 7 0

Dr. PROFIT and LOSS ACCOUNT No. 2. Cr.

To Balance brought forward from last Account, 30th September, 1911			£98,608 7 11	By Balance as per Balance Sheet	£115,814 11 5
,, Loss for year ended 30th September, 1912, brought down	£9,724 4 7			NOTE.—The dividend accrued on 150,000 Victoria Falls and Transvaal Power Co., Ltd., Cumulative Preference Shares amounts to £14,334 4s. 9d. (less tax) at date.	
,, Depreciation and Sundry Writings off—					
Estates Permanent Works, Buildings, etc. £1,932 19 7					
Cornelia Colliery, Plant, Buildings, etc. 3,457 19 4					
Central Colliery, Plant, Buildings, Shaft, etc. 1,791 0 0					
	7,181 18 11				
,, Provision for Bad and Doubtful Debts	300 0 0				
			17,206 3 6		
			£115,814 11 5		£115,814 11 5

Audited and found correct,
ALEX. AIKEN & CARTER,
Auditors.

EMRYS EVANS,
GEO. FALCKE, Directors.

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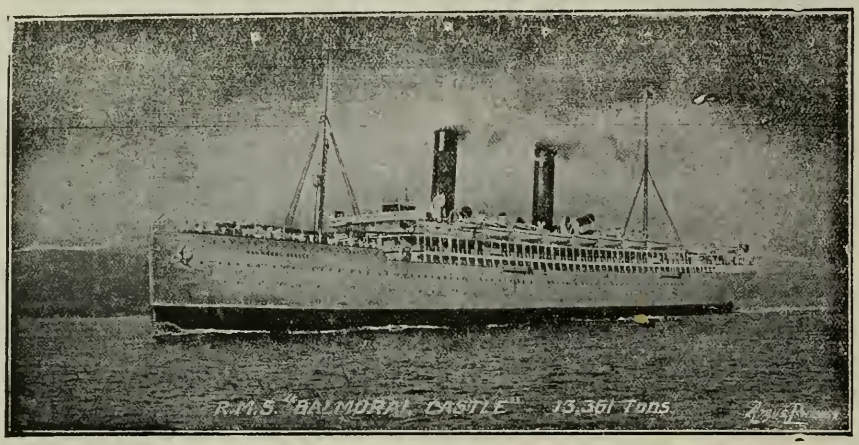

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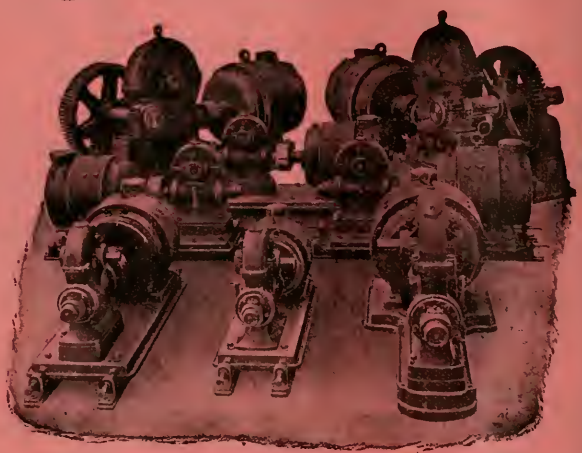

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